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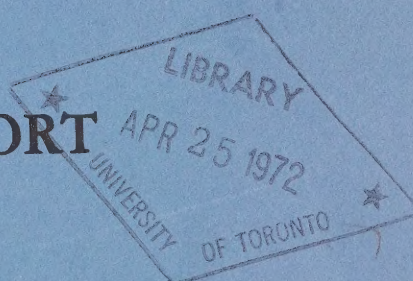


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NATIONAL ENERGY BOARD

ANNUAL REPORT



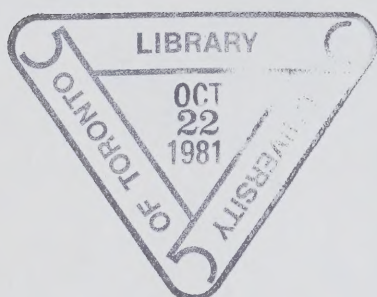
**FOR THE YEAR ENDED
31 DECEMBER 1971**

NATIONAL ENERGY BOARD

Annual Report

FOR THE YEAR ENDED

31 December 1971



Information Canada
Ottawa, 1972

Cat. No. NE1-1971



File No. 7-2-15

31 March 1972

The Honourable Donald S. Macdonald, P.C.,
Minister of Energy, Mines and
Resources,
O t t a w a.

Dear Sir:

In accordance with the provisions of Section
91 of the National Energy Board Act, Statutes of Canada,
1959, Chapter 46, I have the pleasure to submit the
Annual Report of the Board for the year ended 31 December,
1971.

Yours faithfully,

A handwritten signature in cursive script, appearing to read "Robert D. Howland".

(Robert D. Howland)
Chairman.

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NATIONAL ENERGY BOARD

R.D. Howland	-	Chairman
D.M. Fraser	-	Vice-Chairman
N.J. Stewart	-	Associate Vice-Chairman
H.L. Briggs	-	Member (Resigned 1 Sept 71)
J.G. Stabback	-	Member
A. Cossette Trudel	-	Member
C.G. Edge	-	Member
Robert A. Stead	-	Secretary

NATIONAL ENERGY BOARD
ANNUAL REPORT

INTRODUCTION

This is the thirteenth Annual Report of the National Energy Board which summarizes activities during the year 1971 in respect of the discharge of its statutory responsibilities.

In establishing the National Energy Board in 1959 to assure Canadians the best use of energy resources, Parliament conferred on the Board two major functions.

It established the Board as a regulatory authority responsible for adjudicating upon applications for licences to export and to import natural gas, applications to construct and operate interprovincial and international pipe lines for the transportation of petroleum and its products and of natural gas, and applications for licences to export electrical power and energy and for certificates to construct and operate international power lines. It also assigned to the Board the responsibility for regulating the rates, tolls and tariffs of oil and gas pipe lines under the Board's jurisdiction.

Parliament also gave the Board an advisory role. In fulfilling this responsibility the Board is required to keep under review all matters relating to energy within the jurisdiction of the Parliament of Canada and to recommend

to the Minister any measures that the Board considers necessary or advisable to undertake in the public interest to ensure proper use and development of energy and its sources.

In 1970, Parliament by amendments to the National Energy Board Act substantially increased the responsibilities of the Board, as described in last year's Annual Report. No legislative changes were made in 1971.

The Board consists of seven full-time members. Each is appointed by the Governor in Council to hold office for a term of seven years, with provision for reappointment until a member reaches the age of seventy. During 1971 Mr. H. Lee Briggs, a member since 15 August, 1959, retired from the Board.

At 31 December, 1971 the strength of the Board and staff numbered 192 compared with 167 for the same date in 1970. The budget appropriation for the 1971-72 fiscal year totalled \$3,052,400 of which \$2,452,473 was for salaries and \$599,927 was for all other expenses.

EXPLORATION AND DEVELOPMENT - OIL AND GAS

The tempo of exploration activity in nearly all frontier areas, especially north of the Arctic Circle and off the East Coast, increased during 1971. Some of the more significant developments are commented on in the following pages and are identified on the map at the end of this section.

The first official oil and gas discovery on the Scotian Shelf took place on Sable Island (Map Reference No. 1). As a result of this discovery, the prospects for the sedimentary basin have been enhanced but reservoir configuration is yet to be evaluated.

A deep test will be drilled onshore in 1972 at Irishtown, on Prince Edward Island (No. 2). From previous drilling the general area is regarded as having a potential in the Mississippian carbonates but no shows have been recorded to date.

The first offshore hole to be drilled on the Labrador Shelf, Leif, was prematurely abandoned at 3,558 feet (No. 3), after the drilling rig had been forced off location by an iceberg. This pioneering effort will continue in 1972.

There was an upturn in exploration drilling in the Province of Quebec during 1971 (No. 4). Marginal

quantities of gas were reported in some of the wells. The only known occurrence of natural gas in the Province is a very shallow sand bed near Trois-Rivières.

Exploration in Manitoba was virtually at a standstill throughout the year. Saskatchewan experienced little activity with minor oil and gas discoveries in the southwest parts of the Province. Development of heavy oil production continued in the general Lloydminster area.

Alberta has been responsible for over 80 per cent of Canada's conventional hydrocarbon reserves and production, yet a decline in exploration was clearly discernible during the past year. Although deep drilling activity in the Province near the end of the year compared favourably with that of December 1970, little encouragement was provided by results. The only bright spot on the picture was the development of the Dunvegan gas discovery first established in 1963 on the Peace River Arch (No. 5). Two Swan Hills member (Devonian Reef) discoveries indicated the possibilities for this important but elusive target in carbonates of Mississippian age. At Rosevear (No. 6), eight rigs were attracted by rumours of earlier discovery of 200 feet of net pay; in quick succession all were unsuccessful. There has been no follow-up drilling at Ricinus West (No. 7).

Drilling slackened in British Columbia but there was greater interest in exploratory acreage offered at Crown Reserve sales. An interesting dual zone gas discovery was made at Attachie (No. 8). A dry hole on Graham Island (No. 9) was the only coastal well drilled in the west during 1971.

Exploratory effort in the southern portion of the Northwest Territories and Yukon Territory yielded no encouragement despite drilling for Devonian gas on both foothills and plains type features. Further north, one medium to heavy oil discovery was made at Mackey Lake (No. 10) and this presents new opportunities for this hitherto unproductive area.

The Eagle Plains, Peel Plateau, and Norman Wells areas in the Yukon Territory (No. 11) experienced a surge in the latter part of the year due partly to proposed pipe line routes which may traverse these geological sub-provinces.

The interest generated in the Mackenzie Delta area by the Atkinson oil discovery (No. 12) of January 1970 was increased greatly during 1971 as a result of the Mayogiak oil find near Tuktoyaktuk (No. 13) and the Taglu wet gas discovery (No. 14) on Richards Island. This chain of events has set off an intensive drilling program.

The Arctic Archipelago witnessed a fast pace of activity with filing of permits in remote parts of the sedimentary basin. A third gas discovery, Kristoffer Bay (No. 15), made late in the year, added further impetus to the exploration thrust. Shown on the map is the relative position of Drake Point 1969 gas discovery (No. 16) and the King Christian 1970 gas find (No. 17). All three gas discoveries are relatively shallow and appear to have been made in thick sands of Triassic age.

The value of Western Canadian production of oil, gas and gas liquids was \$2,000 million in 1971 as against \$1,600 million in 1970 and \$1,446 million in 1969.

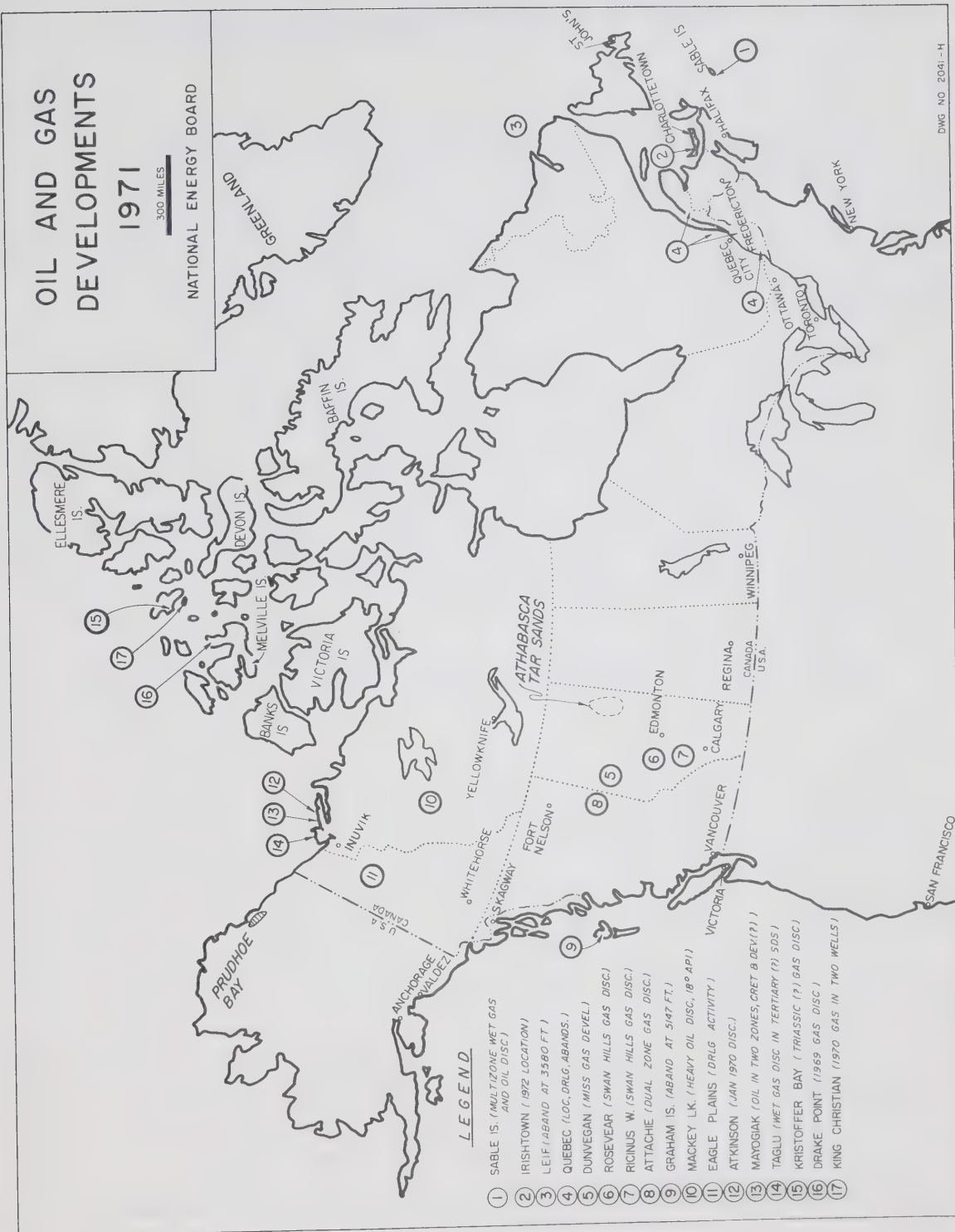
Expenditures for exploration and production, both capital and operating, were \$1,500 million in 1971 as against \$1,420 million in 1970.

As in 1970, bonuses paid to the Crown in the Prairie Provinces continued at a low level. No land sales have been held in the Northwest Territories, Yukon or Offshore, since 1969. To partially offset the effects of low bonus offers, large sums of money during 1971 were committed to acquire interests in acreage in the frontier areas.

OIL AND GAS DEVELOPMENTS 1971

300 MILES

NATIONAL ENERGY BOARD



LEGEND

- 1 SABLE IS. (MULTIZONE WET GAS AND OIL DISC.)
- 2 IRISHTOWN (1972 LOCATION)
- 3 LEIF (ABAND AT 3580 FT.)
- 4 QUEBEC (LOC. DRUG. ABANDS.)
- 5 DUNVEGAN (MISS GAS DEVEL.)
- 6 ROSEVEAR (SWAN HILLS GAS DISC.)
- 7 RICINUS W. (SWAN HILLS GAS DISC.)
- 8 ATTACHE (DUAL ZONE GAS DISC.)
- 9 GRAHAM IS. (ABAND AT 5147 FT.)
- 10 MACKEY LK. (HEAVY OIL DISC. 18° API)
- 11 EAGLE PLAINS (DRUG. ACTIVITY)
- 12 ATKINSON (JAN 1970 DISC.)
- 13 MAYOGIAK (OIL IN TWO ZONES, CRET. & DEV. (?))
- 14 TAGLI (WET GAS DISC. IN TERTIARY (?) SDS)
- 15 KRISTOFFER BAY (TRIASSIC (?) GAS DISC.)
- 16 DRAKE POINT (1969 GAS DISC.)
- 17 KING CHRISTIAN (1970 GAS IN TWO WELLS)

OIL AND GAS - PRODUCTION AND MARKETS

Oil

Canadian production of liquid hydrocarbons again reached record levels in 1971: production averaged 1,620,000 barrels daily, an increase of 10 per cent over 1970.

Net production of crude oil and natural gas liquids for the second successive year exceeded gross additions to reserves. The Board views this development with unease, despite the fact that year-end reserves were at least 17 times 1971 production. The Board's concern would be greater were it not for the vigorous exploration programs being conducted by the Canadian petroleum industry and the efforts which are devoted to commercial development of the Athabasca tar sands.

Export markets accounted for about 70 per cent of the growth in demand for Canadian oil. The United States authorities initially set the 1971 import quota for Canadian crude and unfinished oils to the area east of the Rockies ("Districts I-IV") at 450,000 barrels daily, but this figure was subsequently increased to 475,000 barrels daily, 20 per cent more than the previous year. Canadian natural gas liquids and finished oil products remained free of United States import control. The export rate of

539,000 barrels daily of crude oil and equivalent into these markets showed an increase of 21 per cent over the previous year.

Canadian oil exports to the United States west coast ("District V"), which are not subject to import licensing, showed no similar increase: refiners at the Puget Sound and in California on occasion in the second half of the year found it advantageous to displace some Canadian oil with tanker-borne imports.

The record of receipts by United States buyers of Canadian crude oil and equivalent in 1970 and 1971 is displayed in Appendix X.

The Board continued to evaluate the development of export markets for Canadian oil, in both the long and the short term.

Domestic markets in Ontario and the western provinces absorbed about 30 per cent of the 1971 increase in Canadian oil production. As well as the normal growth in demand in these areas, some displacement occurred of foreign-origin oil products.

In part, this reflected the impact of statutory control by the Board of motor gasoline imports. In issuing licences the Board is charged with determining whether a

given importation will be consistent with the development and utilization of Canadian indigenous oil resources. In general, and after carefully reviewing the availability of indigenous-origin product, it has found that relatively few imports of motor gasoline for consumption in central and western Ontario meet this test of consistency.

The Board issued 83 motor gasoline import licences during 1971 permitting the importation of a total of 4,621,431 barrels of motor gasoline and motor gasoline blending components. Of this volume 99 per cent was for consumption in Eastern Ontario, Quebec and the Atlantic Provinces.

Rising demand for Ontario-refined motor gasoline entails greater availability of gasoline co-products. This, together with the increased cost of foreign oil consequent upon overseas developments, resulted in a substantial reduction in the westwards movement of foreign-origin oil into central and western Ontario. Appendix XII tabulates these movements over the period 1966-71.

Despite a certain curtailment in the flow of foreign oil into Ontario, demand in Quebec and the Atlantic Provinces was sufficient to result in a record rate of oil imports in 1971 (see Appendix XI). At about 800,000 barrels daily, the oil requirements of those parts of the country

which are supplied with foreign oil put Canada among the world's largest importers.

The Board has always been responsive to the need which thereby arises to keep itself fully informed of developments abroad. In the early months of 1971 sharp increases occurred in the costs of overseas oil consequent upon fiscal settlements between oil producing companies and host states, most of them members of the Organization of Petroleum Exporting Countries. At the year-end a further similar round of negotiations was in progress relating to adjustments in overseas oil prices following the realignment of international exchange rates.

These developments and also the continuing tense political situation in the Middle East held a threat of interruption to Canada's oil imports and therefore lent added point to the Board's continuing review of the security of this supply.

In a related area, the Board continued to monitor oil import prices and enlarged its discussion with refining companies over the cost to them of foreign supplies. These exchanges have been primarily directed towards establishing the circumstances governing prevailing levels of price and freight.

During the year new foreign-crude refineries came on stream at Point Tupper, Nova Scotia and St. Romuald, Quebec and work was in hand on a third at Come By Chance, Newfoundland. This capacity will permit a large reduction in the proportion of eastern Canadian oil imports which are in the form of refined products. Particularly to the extent that these plants engage in processing for export they represent an essentially new element in eastern Canadian oil operations.

Partly in order to better appreciate the possible implications of these changing circumstances, the Board began at the year-end a comprehensive survey of eastern Canadian oil supply and demand over the next few years.

The completion of this survey, like much of similar activity by the Board, depends heavily on the cooperation of industry. For the cooperation which is extended, the Board is greatly indebted.

Gas

The Board continued to study existing gas reserves and additions in Canada to obtain current reserve information which, together with the current requirements, provides the data for calculating current surplus. Reserve estimates of other governmental agencies and industry are

carefully considered by the Board in establishing Canadian reserves.

Natural gas sales in Canada during 1971 increased by approximately 8 per cent. The market gains were substantially attributable to sales increases in Ontario; the growing concern about air pollution and the introduction of strict controlling regulations related thereto; recent increases in the prices of alternate fuels; and the convenience of using gas. Markets again were characterized by increasing demands in the commercial and industrial sectors. For the first time more than half of all Canadian gas sales were made in Ontario and Quebec.

Exports of natural gas to the United States during 1971 increased by 17 per cent over 1970 to more than 900 billion cubic feet. Information on gas and propane licences and orders, as well as the quantities exported and imported, is contained in Appendices IV to IX.

In 1971 the Board heard jointly, in two phases, a number of applications for licences to export gas and for certificates of public convenience and necessity respecting the construction and operation of pipe line facilities to transport the gas for which export licences were being sought. The first phase of the hearing dealt

with evidence respecting Canadian gas requirements, reserves and surplus.

After conclusion of this first phase, the Board decided that there was no surplus of gas remaining after due allowance had been made for the reasonably foreseeable requirements for use in Canada having regard to the trends in the discovery of gas in Canada. Accordingly, the Board, as reflected in the Reasons for Decision dated November 1971, dismissed all of the applications for licences to export gas and for certificates except in relation to the proposed movement of United States gas through Canada from the Tiger Ridge field in the State of Montana for export at Emerson, Manitoba. The hearing was reconvened with respect to this aspect on 8 December 1971 but had not been completed at the end of 1971.

PIPE LINE CONSTRUCTION AND OPERATION

Significant pipe line construction during 1971 included facilities installed by Interprovincial Pipe Line Company, Alberta Natural Gas Company Ltd., Trans-Canada Pipe Lines Limited and Westcoast Transmission Company Limited.

Interprovincial added electric pumping facilities, representing a total horsepower of approximately 130,000, to its pipe line system in Alberta, Saskatchewan, Manitoba and Ontario and constructed approximately 80 miles of 20-inch diameter pipe line looping in Ontario. Additional oil storage tanks were also provided. To complement this construction in Canada, Lakehead Pipe Line Company, Inc., a wholly-owned subsidiary of Interprovincial, installed pumping facilities on its interconnecting pipe line in the United States. These extensions and modifications were required to meet the estimated demand in 1972 for Canadian petroleum in market areas served by the Interprovincial and Lakehead pipe line systems.

Alberta Natural installed additional compression facilities and executed other related works at three locations along its pipe line system in British Columbia. These facilities are required to transmit increased exports of gas

authorized under Licence No. GL-35, issued 9 September, 1970.

Trans-Canada completed its third line of pipe in Western Canada, a 36-inch diameter pipe line from Empress, Alberta to Winnipeg, Manitoba, as well as making additions and modifications to a number of compression stations along its pipe line system. The Company also initiated construction of a fourth line of pipe, a 42-inch diameter pipe line in the Prairie Provinces. These facilities were required to meet increased demands for gas in eastern Canadian markets.

Westcoast Transmission constructed approximately 234 miles of 36-inch diameter pipe line looping and 110 miles of 24-inch diameter line of pipe in Northern British Columbia. The Company also installed additional compression facilities at four locations on its pipe line system, as well as other related works such as metering stations and gas treating units. These facilities were required to meet increased demands for gas in Canada and to transmit increased exports authorized under Licence No. GL-41, issued 9 September, 1970.

In addition to the previously mentioned projects, construction of gas and oil pipe line facilities was carried

out during 1971 as follows: construction of a pipe line by Amoco Canada Petroleum Company Ltd. in Northern British Columbia and the Yukon Territory for transporting gas to the Beaver River pipe line of Westcoast Transmission; construction of a pipe line by Cochin Pipe Lines Ltd., from Empress, Alberta to Kerrobert, Saskatchewan, for transporting liquid hydrocarbons recovered from natural gas; installation of additional pumping units on the Trans Mountain Oil Pipe Line Company's system; extension of the Trans-Northern Pipe Line Company system to supply the Toronto International Airport (Malton); minor modifications to the Montreal Pipe Line Company Limited system; and construction of an 8-inch diameter pipe line by Westspur Pipe Line Company to transport crude oil to the Amoco and Portal pipe line systems.

During the year the Board considered applications and issued certificates or orders authorizing the construction of gas pipe line facilities as follows:

- (a) authorization was given to Trans-Canada under Certificate GC-45 issued 11 May, 1971 to construct in 1972 approximately 92 miles of 42-inch diameter pipe line in the Provinces of Saskatchewan and Manitoba, approximately 387 miles of

36-inch diameter pipe line in Northern Ontario, and approximately 10 miles of 24-inch pipe line east of Toronto and additional compression facilities in Ontario;

- (b) authorization was also granted to Trans-Canada to replace part of its 30-inch pipe in the City of North Bay and to install additional pipe in and near the Town of Temagami, Ontario.

The design, operation, maintenance and safety of pipe lines are of prime concern to the Board and in this respect failures and malfunctions are immediately reported and investigated to determine the causes of failure and to take steps to prevent recurrence of similar failures in the future. A summary list of incidents which occurred during 1971 is to be found at Appendix XIII.

The Board is continuing to work on development of safety regulations for oil pipe lines. These regulations are intended to provide safety requirements additional to the existing C.S.A. Standards Z-183 - 1967. Additional requirements for pipe lines in and from the Arctic regions are also being developed.

In 1971 the Board issued a total of 1,188 certificates, licences, orders and permits. These included 5 certificates of public convenience and necessity; 7 licences and orders for the export of gas and power; 28 orders exempting certain pipe line and power facilities from certain requirements of the Act; 47 orders approving plans, profiles and books of reference for new pipe lines or portions thereof, as well as deviations of existing pipe lines; 45 orders approving plans for compressor, pump and meter stations; 112 orders granting leave to open for oil and gas pipe line facilities; 2 orders authorizing the operation of existing pipe line facilities at operating pressures higher than those previously permitted; 3 orders authorizing the operation of existing gas pipe lines in areas with an increased population density in accordance with the prescribed standards; 12 orders approving the sale or conveyance or abandonment of parts of pipe lines; and 657 orders relating to the crossing of and by pipe lines with regard to other utilities, highways and railways. Generally speaking these orders relate to the protection of the public and pipe line facilities and to safety in pipe line operation.

The Board's staff carried out numerous field inspections in connection with the installation and testing of new oil and gas pipe line facilities.

There was an increase of 15 per cent in the total number of orders which were issued in 1971 over the previous year, while, at the same time, the complexity and variety of the applications handled by the Board increased. The annual totals of certificates, licences, orders and permits which the Board has issued since its inception are set out in Appendix XVII.

The capital expenditures relating to 1971 construction of pipe lines and power transmission facilities under the Board's jurisdiction are summarized in Appendices I and III.

ELECTRIC POWER

Following the adjournment sine die in November 1970 of the public hearing on an application by The Ontario-Minnesota Pulp and Paper Company Limited for licences to export electric power and for a certificate for a new international power line, the hearing was reconvened at Fort Frances, Ontario in April 1971. After reviewing the evidence submitted at that hearing, the Board decided that additional information was required on border price and a re-hearing of the evidence in this regard was set for February 15, 1972.

A certificate for a new 230,000 volt international power line was issued to British Columbia Hydro and Power Authority on the basis of a public hearing which had been held at the end of 1970.

Following changes to the National Energy Board Act, which required that power lines used for importing electricity into Canada should henceforth be certificated by the Board, all electric power utilities were asked to provide information on such lines and two certificates, as listed in Appendix II, were issued with respect thereto. One exemption order was also issued under Section 49 of the Act.

During the year the Board issued one order for the export of electric power under section 6A of the National Energy Board Act Part VI Regulations. Details of this order are shown in Appendix XIV. No new licences were issued.

The Board continued its technical and economic studies in the field of electric power, and especially on potential major developments such as those envisaged in the Province of Quebec on the rivers flowing into James Bay.

The Board continued its participation on the Nelson River Review Committee and commenced participation in the Technical Advisory Committee for the Hydro-Quebec Institute of Research.

The Board maintained its observer status in the National Electric Reliability Council in the United States and was represented at the quarterly meetings of that Council's executive board.

Representatives of the Board presented technical papers at the World Energy Conference in Bucharest, Roumania and at the International Power Conference on high-voltage transmission, held in Winnipeg.

Board representatives continued their participation in the Canadian Standards Association, Canadian Electrical Association, Canadian Nuclear Association and the Institute of Electrical and Electronics Engineers.

FINANCIAL MATTERS

During 1971 much of the Board's attention as to financial matters was focused on an application by Trans-Canada Pipe Lines Limited under Part IV of the National Energy Board Act for permission to increase its rates for the transmission of gas in Canada by approximately \$40,000,000 annually. This application, which was initially filed by Trans-Canada in August 1969 and later replaced and supplemented by further filings, was the first to come before the Board under Part IV of the Act, which provides for the regulation of traffic, tolls and tariffs of pipe line companies under the jurisdiction of the Board.

To facilitate the orderly presentation of evidence in the Trans-Canada rate case, the Board determined that it would be necessary to conduct the hearing in two phases. The first phase concerned the rate base, rate of return and total cost of service of Trans-Canada. The hearing began early in 1971 and continued at intervals on 78 days before being completed with the filing of rebuttal argument by Trans-Canada in October 1971.

In 1970 Trans-Canada realized an operating profit of about \$50.6 million out of a total revenue of about \$281.5 million. In its application to the Board, the

Company submitted that using 1970 as a test period, to cover its total cost of service including a return of \$69.4 million, the proper level of revenue would have been \$321.5 million, taking into account adjustments for expenses which had been in effect for only part of 1970 or could be reasonably anticipated to occur in the immediately succeeding 12-month period.

The Board, after considering and weighing all the evidence and argument adduced in this first phase of the proceeding, found that a return of \$59.7 million, to be part of a total allowable cost of service amounting to \$302.1 million, would be appropriate. It is anticipated that the Board's findings thereon, as contained in the Reasons for Decision dated December 1971, will permit the commencement of the second phase of the proceeding early in 1972. This phase will be concerned with the determination of the tolls and tariffs to be charged by Trans-Canada.

The Board was also actively involved with the financial aspects of applications coming before the Board for certificates to construct new pipe line facilities, for licences to export natural gas and derivatives therefrom and for licences to export electric power. In this regard, particular attention was directed to the capital structures of the various applicants, the proposed methods of financing

new projects and the border price of energy to be exported.

The Board continued to conduct examinations of the accounts and records of gas and oil pipe line companies under its jurisdiction. During 1971, the accounts of seven major companies having total assets of 1.7 billion dollars and total annual revenues of some 500 million dollars were examined. The information gained from such examinations provided the Board with data which is useful and necessary to enable it to perform its regulatory functions.

In conformity with its general policy, the Board reviewed and analysed a wide variety of agreements and contracts covering the sale, purchase and transportation of natural gas by pipe line companies under its jurisdiction. Special surveillance procedures were also developed to maintain a purview of the price of natural gas exported to the United States and to monitor the financial impact of United States economic policies on jurisdictional companies and the Canadian energy field in general.

In the continuing appraisal of the financial status of the energy industry in Canada, liaison was maintained with various sectors of the national and international financial communities and rate regulatory agencies. A representative of the Board presented a technical paper

on "The Tariffs and Pricing of Natural Gas" at a United Nations Interregional Seminar on the Development and Utilization of Natural Gas, in Moscow, U.S.S.R.

SUPPORTING ENERGY STUDIES

A brief resumé of some of the studies and related activities of the Board in 1971 are set forth hereunder.

Application of quantitative analysis and operations research techniques to energy problems continued with increasing emphasis being placed on the relationship of natural gas reserves to Canadian energy policies.

Studies involving mathematical analyses of statistical data on gas reserves were carried out to test methods of forecasting discoveries and trends in gas reserves.

Mathematical models were developed to assist in investigating the economics of various gas supply patterns linking sources of supply and areas of market demand.

Techniques were developed and applied as part of the Board's continuing simulation program in respect of operations of gas pipe line systems to assist in feasibility studies, assessments of pipe line failures and probability distribution of price differentials of competing energy sources.

A model was developed for optimal selection, sequencing and timing of economic investment alternatives, and a control scheme was initiated to monitor automatically the accuracy of estimates of annual energy statistics.

In support of the Canadian Government Guidelines announced in August 1970 for construction and operation of northern oil and gas pipe lines, the Board's staff during the past year has been engaged in the development of research projects related to such pipe lines and marketing of the possible northern hydrocarbon production. In co-operation with the responsible federal departments, consideration has been given to such matters as environmental protection, pollution control, safety standards for pipe lines, participation in training and employment of northern residents, evaluation of methods for the construction of an oil and a gas pipe line on land and off shore.

Numerous studies were undertaken on alternative methods of transporting oil from the Canadian Arctic and to assess the impact of northern oil on existing markets. Technical feasibility studies and investigations are being conducted in anticipation of regulating the construction of oil pipe lines in permafrost areas.

The Board's staff has provided assistance to the Canadian Standards Association in the formulation of Canadian Standards for northern pipe lines.

The Board has been using the Statistics Canada input-output model to determine the impacts of energy industries on the Canadian economy. In this regard the Board is

participating in a joint study with industry using the model to determine the total domestic impact of the petroleum industry.

The Board continued to provide Canadian representation to the North Atlantic Treaty Organization on matters relative to energy policy.

The Board participated in the energy activities of the Organization for Economic Co-operation and Development by providing representation at meetings of the Energy and Oil Committees and by making contributions to various projects undertaken by these two groups.

In 1969, York University introduced a post-graduate course in Energy Economics which it had developed in cooperation with the Board, the Public Service Commission and the Department of Energy, Mines and Resources. The intended purpose of the program has been to provide specialized energy-oriented economists for government and industry. The Board has maintained contact with the program during the intervening years and is pleased to report that a graduate of this course joined its staff in 1971.

The Board's staff was active in interdepartmental discussion of areas and issues relating to oil and in which the expertise built up over the years is increasingly useful

to government. These embraced such diverse matters as coastal shipping, marine pollution and petrochemical feedstocks.

APPENDIX I

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1971

NATURAL GAS PIPE LINES

APPLICANT

1. Trans-Canada Pipe Lines Limited

FACILITIES

- i) Approximately 70.2 miles of 36-inch diameter pipe line in the Provinces of Saskatchewan, Manitoba and Ontario.)
- ii) Approximately 137.7 miles of 42-inch diameter pipe line in the Provinces of Alberta, Saskatchewan and Manitoba.)
- iii) Modifications to compressors in the Province of Saskatchewan.)
- iv) Additional compression facilities in the Province of Ontario.)
- v) Certain construction for pipe line purposes in the Provinces of Manitoba and Ontario for approximately 387.1 miles.)

ESTIMATED COST

\$66,805,100.00

HEARD

commencing
26 January
1971

ISSUED

16 February
1971

CERTIFICATE NO.

GC-44
(as amended)

APPENDIX I (cont'd)NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1971NATURAL GAS PIPE LINES (cont'd)

<u>APPLICANT</u>	<u>FACILITIES</u>	<u>ESTIMATED COST</u>	<u>HEARD</u>	<u>ISSUED</u>	<u>CERTIFICATE NO.</u>
2. Trans-Canada Pipe Lines Limited	<ul style="list-style-type: none"> i) Approximately 91.7 miles of 42-inch diameter pipe line in the Provinces of Saskatchewan and Manitoba.) ii) Approximately 387.1 miles of 36-inch diameter pipe line in the Provinces of Manitoba and Ontario.) iii) Approximately 10.4 miles of 24-inch diameter pipe line in the Province of Ontario.) iv) Conversion of a compressor unit in the Province of Saskatchewan.) v) Additional compression facilities in the Province of Ontario.) 	\$147,532,500.00	commencing 26 January 1971	11 May 1971	GC-45

APPENDIX I (cont'd)

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APPENDIX I (cont'd)

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1971

<u>OIL PIPE LINES</u>					
<u>APPLICANT</u>	<u>FACILITIES</u>	<u>ESTIMATED COST</u>	<u>HEARD</u>	<u>ISSUED</u>	<u>CERTIFICATE NO.</u>
1. Interprovincial Pipe Line Company	i) Approximately 77.38 miles of 20-inch diameter pipe line in the Province of Ontario.				
	ii) Seven new pump stations in the Provinces of Alberta, Saskatchewan and Manitoba.				
	iii) Additional pumping facilities and other works connected therewith at sixteen existing pump stations in the Provinces of Alberta, Saskatchewan, Manitoba and Ontario.	\$34,840,000.00	16 March 1971	11 May 1971	00-23
	iv) Additional storage facilities in three locations in the Provinces of Alberta and Ontario.				
	v) Certain modifications at an existing pump station in the Province of Saskatchewan.				

APPENDIX I (cont'd)

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1971

INTERNATIONAL POWER LINE

<u>APPLICANT</u>	<u>FACILITIES</u>	<u>ESTIMATED COST</u>	<u>HEARD</u>	<u>ISSUED</u>	<u>CERTIFICATE NO.</u>
1. British Columbia Hydro and Power Authority	One international power line to extend approximately 104 miles from a point on the international boundary near Nelway, British Columbia, to the substation of British Columbia Hydro and Power Authority near the City of Cranbrook, British Columbia. This line would be built for 230 kv, three-phase operation, using one 874,500 circular mil ACSR conductor and supported mostly on aluminum towers but in part on H-frame wood-pole structures.	\$9,584,000	1 December 1971	2 February 1971	EC-III-10
2. The Hydro-Electric Power Commission of Ontario	Amending order to Certificate EC-12 to change the operating voltage from 115 kv to 230 kv on the existing international power line designated as circuit M3S between the Sarnia Transformer Station of the Commission in Ontario and the Marysville Station of the Detroit Edison Co. in Michigan.	\$1,440,300	N/A	4 March 1971	AO-1-EC-12

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APPENDIX I (cont'd)

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1971

<u>INTERNATIONAL POWER LINE</u>		<u>FACILITIES</u>				<u>CERTIFICATE NO.</u>	
<u>APPLICANT</u>			<u>ESTIMATED COST</u>	<u>HEARD</u>	<u>ISSUED</u>		
3. The Hydro-Electric Power Commission of Ontario		Amending order to Certificate EC-13 to change the operating voltage from 115 kv to 230 kv on the existing international power line designated as circuit J5D between the J. Clark Keith Generating Station of the Commission in Ontario and the Waterman Station of the Detroit Edison Co. in Michigan.	\$830,000	N/A	4 March 1971	AO-1-EC-13	
4. The Hydro-Electric Power Commission of Ontario		Amending order to Certificate EC-14 for change in circuit designation.	N/A	N/A	23 September 1971	AO-1-EC-14	
5. The Hydro-Electric Power Commission of Ontario		Amending order to Certificate EC-15 for change in circuit designation.	N/A	N/A	23 September 1971	AO-1-EC-15	
6. The Hydro-Electric Power Commission of Ontario		Amending order to Certificate EC-17 for change in circuit designation.	N/A	N/A	23 September 1971	AO-1-EC-17	
7. The Ontario-Minnesota Pulp and Paper Company Limited		Amending order to revoke Certificate EC-III-5 issued 20 February, 1964.	N/A	N/A	18 May, 1971	MO-8-71	
N/A	Not applicable						

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APPENDIX II

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY ISSUED DURING 1971, PURSUANT TO
SUBSECTION 31(1) OF AN ACT TO AMEND THE NATIONAL ENERGY BOARD ACT, CHAPTER 27, REVISED
STATUTES OF CANADA, 1970

INTERNATIONAL POWER LINE

<u>APPLICANT</u>	<u>FACILITIES</u>	<u>ISSUED</u>	<u>CERTIFICATE NO.</u>
1. Lincoln Electric Cooperative Inc.	One international power line which extends approximately 1-½ miles from the local distribution system near Newgate, British Columbia, to a point on the international boundary approximately 2 miles south of Newgate. This line operates at 60 hertz, 14,400 volts and consists of one single-phase circuit of two conductors of size No. 4 ACSR, supported on wood poles.	14 September, 1971	EC-51
2. Lincoln Electric Cooperative Inc.	One international power line which extends from the local distribution system near Roosville, British Columbia, to a point on the international boundary approximately ¼ mile east of Roosville, and adjacent to the Canadian Customs Station. This line has a negligible length, operates at 60 hertz, 14,400 volts and consists of one single-phase circuit of two conductors of size No. 4 ACSR, supported on wood poles.	14 September, 1971	EC-52

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APPENDIX III
EXEMPTION ORDERS PURSUANT TO SECTION 49
ISSUED DURING 1971
CLASS "B" CONSTRUCTION

(This is construction which, at the discretion of the Board, may be the subject of a specific exemption order pursuant to Section 49).

NATURAL GAS PIPE LINES

- (1) Dome Petroleum Limited, a two-mile ethane pipe line, in the Provinces of Alberta and Saskatchewan, estimated cost \$50,400, Order No. XG-1-71, dated 26 February, 1971.
- (2) Trans-Canada Pipe Lines Limited, new meter station, to be known as 'Marysville Meter Station', and other works connected therewith, in the Province of Ontario, estimated cost \$60,300, Order No. XG-2-71, dated 1 April, 1971.
- (3) ICG Transmission Limited, new meter station, to be known as 'Fort Frances Meter Station No. 2', and other works connected therewith, in the Province of Ontario, estimated cost \$5,065, Order No. XG-3-71, dated 13 May, 1971, as amended.
- (4) Trans-Canada Pipe Lines Limited, approximately 1.4 miles of 36-inch diameter line of pipe, upgrading of existing 30-inch diameter line of pipe, in the Province of Ontario, estimated cost \$1,098,600, Order No. XG-4-71, dated 10 June, 1971, as amended.
- (5) Westcoast Transmission Company Limited, approximately 1.8 miles of 36-inch diameter line of pipe, and a sales connection, in the Province of British Columbia, estimated cost \$567,700, Order No. XG-5-71, dated 17 June, 1971.
- (6) Amoco Canada Petroleum Company Ltd., approximately 1.3 miles of 6.625-inch diameter line of pipe, approximately 0.7 of a mile of 8.625-inch diameter line of pipe, approximately 2.2 miles of 18-inch diameter line of pipe and approximately 8.4 miles of 2.375-inch diameter line of pipe, in the Yukon Territory and in the Province of British Columbia, estimated cost \$969,895, Order No. XG-6-71, dated 17 June, 1971, as amended.

APPENDIX III (cont'd)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1971

CLASS "B" CONSTRUCTION

NATURAL GAS PIPE LINES (cont'd)

- (7) Westcoast Transmission Company Limited, three new meter stations, to be known as 'Highland Valley Meter Station', 'Ashcroft Meter Station', and 'Gibraltar Meter Station', and other works connected therewith, in the Province of British Columbia, estimated cost \$81,500, Order No. XG-7-71, dated 8 July, 1971, as amended.
- (8) Trans-Canada Pipe Lines Limited, a new meter station, to be known as 'Victoria Square Meter Station', and other works connected therewith, in the Province of Ontario, estimated cost \$682,000, Order No. XG-8-71, dated 15 July, 1971.
- (9) Trans-Canada Pipe Lines Limited, a new meter station, to be known as 'Strathcona Meter Station', and other works connected therewith, in the Province of Ontario, estimated cost \$62,800, Order No. XG-9-71, dated 13 August, 1971, as amended.

OIL PIPE LINES

- (1) Interprovincial Pipe Line Company, approximately 3 miles of 20-inch diameter line of pipe, in the Province of Ontario, estimated cost \$480,000 (this amount is included in the authorization granted by OC-23), Order No. XO-1-71, dated 12 February, 1971, as amended.
- (2) Westspur Pipe Line Company, approximately 5.4 miles of 8 5/8-inch diameter line of pipe, in the Province of Saskatchewan, estimated cost \$155,000, Order No. XO-2-71, dated 27 May, 1971, as amended.
- (3) Dome Petroleum Limited and Amoco Canada Petroleum Company Ltd., .04 of a mile of 5.563-inch diameter line of pipe, and 8.6 miles of 8.625-inch diameter line of pipe, in the Province of Ontario, estimated cost \$551,300, Order No. XO-3-71, dated 17 June, 1971, as amended.

APPENDIX III (cont'd)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1971

CLASS "B" CONSTRUCTION

OIL PIPE LINES (cont'd)

- (4) Trans-Northern Pipe Line Company, additional pumping facilities and other works connected therewith, at its existing 'Chesterville Pump Station', in the Province of Ontario, estimated cost \$14,000, Order No. XO-4-71, dated 19 August, 1971.
- (5) Trans-Northern Pipe Line Company, approximately 2.48 miles of 10.75-inch diameter line of pipe, approximately 1.15 miles of 8.625-inch diameter line of pipe, and new terminal facilities to be known as 'Malton Airport Terminal', in the Province of Ontario, estimated cost \$1,500,000, Order No. XO-5-71, dated 2 September, 1971, as amended.
- (6) Cochin Pipe Lines Ltd., approximately 1,800 feet of 8 5/8-inch diameter line of pipe, in the Province of Saskatchewan, estimated cost \$15,000, Order No. XO-6-71, dated 2 September, 1971.
- (7) Trans-Northern Pipe Line Company, certain pumping equipment modifications and other works connected therewith, at its existing 'Clarkson Pump Station', in the Province of Ontario, estimated cost \$26,000, Order No. XO-7-71, dated 4 November, 1971.
- (8) Trans-Northern Pipe Line Company, additional pumping facilities and other works connected therewith, at its existing 'Port Credit Pump Station', in the Province of Ontario, estimated cost \$55,000, Order No. XO-8-71, dated 4 November, 1971.

APPENDIX III (cont'd)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1971

CLASS "C" CONSTRUCTION

(This is miscellaneous construction of a routine character which, at the discretion of the Board, may be the subject of an annual blanket exemption order pursuant to Section 49).

NATURAL GAS PIPE LINES

- (1) Alberta Natural Gas Company, for certain miscellaneous facilities to be added to its pipe line system in the Provinces of Alberta and British Columbia, estimated cost \$2,404,462, Order No. XGM-1-71, dated 4 February, 1971.
- (2) Petroleum Transmission Company, for certain miscellaneous facilities to be added to its pipe line system in the Provinces of Alberta, Saskatchewan and Manitoba, estimated cost \$21,600, Order No. XGM-2-71, dated 1 April, 1971.
- (3) Peace River Transmission Company Limited, for certain miscellaneous facilities to be added to its pipe line system in the Provinces of Alberta and British Columbia, estimated cost \$550, Order No. XGM-3-71, dated 29 April, 1971.
- (4) Trans-Canada Pipe Lines Limited, for certain miscellaneous facilities to be added to its pipe line system in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Quebec, estimated cost \$11,189,200, Order No. XGM-4-71, dated 13 August, 1971.
- (5) Westcoast Transmission Company Limited, for certain miscellaneous facilities to be added to its pipe line system in the Provinces of Alberta and British Columbia, estimated cost \$4,083,291, Order No. XGM-5-71, dated the 26 August, 1971.

APPENDIX III (cont'd)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1971

CLASS "C" CONSTRUCTION

(This is miscellaneous construction of a routine character which, at the discretion of the Board, may be the subject of an annual blanket exemption order pursuant to Section 49).

OIL PIPE LINES

- (1) Trans Mountain Oil Pipe Line Company, for certain miscellaneous facilities to be added to its pipe line system in the Provinces of Alberta and British Columbia, estimated cost, \$407,560, Order No. XOM-1-71, dated 4 March, 1971.
- (2) Montreal Pipe Line Company Limited, for certain miscellaneous facilities to be added to its pipe line system in the Province of Quebec, estimated cost \$169,220, Order No. XOM-2-71, dated 11 March, 1971.
- (3) Westspur Pipe Line Company, for certain miscellaneous facilities to be added to its pipe line system in the Provinces of Saskatchewan and Manitoba, estimated cost \$496,000, Order No. XOM-3-71, dated 25 March, 1971.
- (4) Interprovincial Pipe Line Company, for certain miscellaneous facilities to be added to its pipe line system in the Provinces of Alberta, Saskatchewan, Manitoba and Ontario, estimated cost \$979,800, Order No. XOM-4-71, dated 8 April, 1971, as amended.
- (5) Trans-Northern Pipe Line Company, for certain miscellaneous facilities to be added to its pipe line system in the Provinces of Ontario and Quebec, estimated cost \$110,000, Order No. XOM-5-71, dated 29 April, 1971.

APPENDIX III (cont'd)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1971

INTERNATIONAL POWER LINE

- (1) Mr. William C. Heydlauff, an international power line extending from a point on the United States boundary in Township 1, Range 2, West of the 4th Meridian, in the Province of Alberta, to the farms of Mr. Joe Saville and Mr. William C. Heydlauff. Order No. XE-1-71, dated 21 October, 1971.

APPENDIX IV

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE ISSUED DURING 1971

A. LICENCES - NATURAL GAS EXPORT - SECTION 82

APPLICANT	LICENCE NUMBER	DATE OF ISSUE	POINT OF EXPORT	TERM		MAXIMUM EXPORT VOLUMES		
				FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (MMcf)
1. Trans-Canada Pipe Lines Limited	GL-42 ^(a)	15/4/71	Emerson, Man.	15/4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	2,129,232
2. Trans-Canada Pipe Lines Limited	GL-43 ^(b)	15/4/71	Emerson, Man.	1/11/71	31/10/91	N/S	17,000	340,000

(a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie, and Sarnia, Ontario, to serve the Eastern Canadian market.

(b) Provides volumes of gas required by GLGT for fuel and unaccounted for losses to transport the quantities of gas authorized to be exported and imported under GL-21 and GL-42, and for quantities exported under GL-20 and GL-37 less 14,700,000 Mcf, provided that the quantity shall not exceed 17,000,000 Mcf during any 12-month period.

B. LICENCES - PROPANE EXPORT - SECTION 82

None Issued

APPENDIX IV (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE ISSUED DURING 1971

C. ORDERS AMENDING EXISTING NATURAL GAS EXPORT LICENCES - SECTION 17

APPLICANT	ORDER NUMBER	DATE OF ISSUE	COMMENTS
1. Trans-Canada Pipe Lines Limited	AO-7-GL-2	11/8/71	(i) Amendment extending terminal date from 31/12/71 to 31/5/72 and for revising the price and quantities for 1971 and 1972.
2. Trans-Canada Pipe Lines Limited	AO-2-GL-19	11/5/71	(i) Amendment providing for a ten percent daily make-up allowance. Annual quantities remain unchanged from AO-1-GL-19.
3. Trans-Canada Pipe Lines Limited	AO-6-GL-20	11/5/71	(i) Amendment providing for a ten percent daily make-up allowance. Annual quantities remain unchanged from AO-5-GL-20.
4. Trans-Canada Pipe Lines Limited	AO-1-GL-37	11/5/71	(i) Amendment providing for a ten percent daily make-up allowance. Annual quantities remain unchanged from GL-37.
5. Trans-Canada Pipe Lines Limited	AO-1-GL-38	11/5/71	(i) Amendment providing for a ten percent daily make-up allowance. Annual quantities remain unchanged from GL-38.
6. Trans-Canada Pipe Lines Limited	AO-1-GL-39	11/5/71	(i) Amendment providing for a ten percent daily make-up allowance. Annual quantities remain unchanged from GL-39.

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APPENDIX IV (cont'd)NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE ISSUED DURING 1971D. ORDERS AMENDING EXISTING PROPANE EXPORT LICENCES - SECTION 17

APPLICANT	ORDER NUMBER	DATE OF ISSUE	COMMENTS
1. Dome Petroleum Limited	AO-2-GL-26	2/2/71	(i) Amendment revising volumes (upwards).
2. Pan American Canada Oil Company, Ltd.	AO-2-GL-27	7/10/71	(i) Amendment changing the name of the licensee to Amoco Canada Petroleum Company Ltd.
3. Dome Petroleum Limited	AO-1-GL-31	18/8/71	(i) Amendment allowing the export to the U.S. at Sarnia, Ontario any part of the quantities re-imported into Canada at Sarnia.
4. Pan American Canada Oil Company, Ltd.	AO-1-GL-32	18/8/71	(i) Amendment allowing the export to the U.S. at Sarnia, Ontario any part of the quantities re-imported into Canada at Sarnia.
			(ii) Amendment changing the name of the licensee to Amoco Canada Petroleum Company Ltd.
5. TransCanada GasProducts Limited	AO-1-GL-33	2/2/71	(i) Amendment revising volumes (upwards). (ii) Amendment extending terminal date from 31/12/85 to 31/12/86.
6. TransCanada GasProducts Limited	AO-1-GL-34	18/8/71	(i) Amendment allowing the export to the U.S. at Sarnia, Ontario any part of the quantities re-imported into Canada at Sarnia.

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APPENDIX IV (cont'd)NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE ISSUED DURING 1971E. ORDERS - NATURAL GAS EXPORT - PART VI REGULATIONS - SECTION 18

APPLICANT	ORDER NUMBER	DATE OF ISSUE	POINT OF EXPORT	TERM		EXPORT VOLUMES
				FROM	TO	
1.	EO-1-71	not issued				
2. Gaz Métropolitain, inc.	EO-2-71	27/5/71	Montreal, Que. (truck)	27/5/71	1/4/72	8,160,000 U.S. Gallons LNG*
3. Gaz Métropolitain, inc.	EO-3-71	15/7/71	Montreal, Que. (truck)	15/7/71	1/4/72	7,850,000 U.S. Gallons LNG*
4. Gaz Métropolitain, inc.	EO-4-71	13/8/71	Montreal, Que. (truck)	13/8/71	1/11/71	1,350,000 U.S. Gallons LNG*

*LNG - Liquefied Natural Gas

F. AMENDING ORDERS - NATURAL GAS EXPORT - PART VI REGULATIONS - SECTION 18

None Issued

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APPENDIX V

SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1971

A. NATURAL GAS

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES		
			FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (MMcf)
1. Trans-Canada Pipe Lines Limited	GL-1(AO-2)	Emerson, Man.	11/4/60	14/5/81	223,000	74,000	1,410,000
2. Trans-Canada Pipe Lines Limited	GL-2(AO-7)	Niagara Falls, Ont.	11/4/60 1/11/70 1/11/69	31/3/72 31/3/72 31/10/71	96,900 N/S N/S	20,663 30,000(a) 15,000	N/S N/S N/S
3. Alberta & Southern Gas Co. Ltd.	GL-3(AO-3)	Kingsgate, B.C.	31/10/61	31/10/86	458,750	153,270	3,826,000
4. Westcoast Transmission Company Ltd.	GL-4(AO-3)	Kingsgate, B.C.	10/12/61	10/12/81	152,000	51,000	1,020,000
5. Canadian-Montana Pipe Line Company	GL-5(AO-3)	Cardston, Alta.	31/10/61	31/10/86	36,000	10,950	273,750
6. Niagara Gas Transmission Limited	GL-6(AO-6)	Cornwall, Ont.	7/9/62	30/6/87	23,000(b)	5,520(b)	121,190
7. Canadian-Montana Pipe Line Company	GL-8(AO-1)	Aden, Alta.	1/9/60	14/5/74	99,460	19,892	220,000
8. Alberta & Southern Gas Co. Ltd.	GL-16(AO-1)	Kingsgate, B.C.	1/11/66 1/11/67	31/10/67 31/10/89	113,125 226,250	37,415 74,830	1,614,000
9. Canadian-Montana Pipe Line Company	GL-17(AO-1)	Cardston, Alta.	1/11/66 1/11/67	31/10/67 31/10/89	12,000 24,000	3,650 7,300	164,250
10. Trans-Canada Pipe Lines Limited	GL-18(AO-3)	Emerson, Man.	22/11/65 1/11/66	31/10/88 31/10/89	25,000 143,000	8,000(a) 52,300	1,200,000

APPENDIX V (cont'd)

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SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1971

A. NATURAL GAS	EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES		
				FROM	TO	DAILY (MMcf)	ANNUAL (MMcf)	TERM (MMcf)
11.	Trans-Canada Pipe Lines Limited	GL-19(AO-2)	Philipsburg, Que.	1/11/65	31/10/89	17,700	6,500	108,000
12.	Trans-Canada Pipe Lines Limited	GL-20(AO-6)	Emerson, Man.	21/11/68	31/10/91	87,600	32,100	765,000
13.	Trans-Canada Pipe Lines Limited	GL-21(AO-5) ^(c)	Emerson, Man.	5/11/68	31/10/91	N/S	247,782	6,000,000
14.	Alberta & Southern Gas Co. Ltd.	GL-24(AO-2)	Kingsgate, B.C.	1/11/68 1/11/69 1/11/91	31/10/69 31/10/91 31/10/93	121,000 236,000 135,400	38,900 77,900 44,600	1,841,900
15.	Canadian-Montana Pipe Line Co.	GL-25(AO-2)	Cardston, Alta.	1/11/68 1/11/69 1/11/91	31/10/69 31/10/91 31/10/93	12,000 24,000 13,800	3,650 7,300 4,200	172,650
16.	Patrick T. Buckley	GO-1-68	Coutts, Alta.	1/6/68	31/5/73	(a)	5	N/S
17.	ICG Transmission Limited	GL-28	Sprague, Man.	1/11/70	31/10/95	1,634	337	8,084
18.	ICG Transmission Limited	GL-29	Fort Frances, Ont.	1/11/70	31/10/95	22,023	7,715	192,820
19.	ICG Transmission Limited	GL-30 ^(e)	Sprague, Man.	1/11/70	31/10/95	36,366	12,144	299,990
20.	Alberta & Southern Gas Co. Ltd.	GL-35	Kingsgate, B.C.	1/11/70	31/10/85	205,000	67,500	1,012,500
21.	Canadian-Montana Pipe Line Co.	GL-36	Cardston, Alta.	1/11/70	31/10/85	12,000	3,650	54,750
22.	Trans-Canada Pipe Lines Limited	GL-37(AO-1)	Emerson, Man.	1/11/70	31/10/90	195,800	71,663	1,433,256
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APPENDIX V (cont'd)

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APPENDIX V (cont'd)

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SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1971

A. NATURAL GAS

	EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES		
				FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (MMcf)
23.	Trans-Canada Pipe Lines Limited	GL-38(AO-1)	Emerson, Man.	1/11/70	31/10/90	50,000	18,300	366,000
24.	Trans-Canada Pipe Lines Limited	GL-39(AO-1)	Emerson, Man.	1/11/70	31/10/90	7,200	2,635	52,704
25.	Westcoast Transmission Company Limited	GL-41(f)	Huntingdon, B.C.	1/11/71 1/11/72	31/10/72 31/10/89	733,338 809,200	254,982 281,359	5,042,860
26.	Trans-Canada Pipe Lines Limited	GL-42(c)	Emerson, Man.	15/4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	2,129,232
27.	Trans-Canada Pipe Lines Limited	GL-43	Emerson, Man.	1/11/71	31/10/91	N/S	17,000	340,000
28.	Gaz Métropolitain, inc.	EO-2-71	Montreal, Que. (truck)	27/5/71	1/4/72	N/S	N/S	8,160,000 U.S. gallons LNG*
29.	Gaz Métropolitain, inc.	EO-3-71	Montreal, Que. (truck)	15/7/71	1/4/72	N/S	N/S	7,850,000 U.S. gallons LNG*

N/S Not specified.
* Liquefied natural gas.

(a) Interruptible.

(b) This licence authorizes daily and annual exports of 30,000 Mcf and 6,700 MMcf respectively during the period 23/12/70 to 31/12/71.
(c) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(d) Not more than 1 MMcf in any one month.

(e) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(f) On the day that first delivery of gas was made under Licence GL-41, Licences PC1955-958, GL-23 and GL-40 were revoked.

APPENDIX V (cont'd)SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1971

B. PROPANE EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES ANNUAL (BARRELS)
			FROM	TO	
1. Dome Petroleum Limited	GL-26(AO-2)(a)	Gretna, Man.	1/1/70	31/12/70	1,800,000
			1/1/71	31/12/71	2,565,500
			1/1/72	31/12/72	2,630,500
			1/1/73	31/12/73	2,830,500
			1/1/74	31/12/74	2,829,000
			1/1/75	31/12/75	2,866,500
			1/1/76	31/12/76	2,864,500
			1/1/77	31/12/77	2,830,000
			1/1/78	31/12/78	2,811,500
			1/1/79	31/12/79	2,819,500
			1/1/80	31/12/80	2,922,500
			1/1/81	31/12/81	3,108,500
			1/1/82	31/12/82	3,132,500
			1/1/83	31/12/83	2,820,000
			1/1/84	31/12/84	2,434,000
			1/1/85	31/12/85	2,139,500
			1/1/86	31/12/86	1,800,000
			1/1/87	31/12/87	775,000
			1/1/88	31/12/88	249,000
			1/1/89	31/12/89	199,000
2. Amoco Canada Petroleum Company Ltd.	GL-27(AO-2)(a)	Gretna, Man.	1/1/70	31/12/70	1,800,000
			1/1/71	31/12/71	1,636,000
			1/1/72	31/12/72	1,491,000
			1/1/73	31/12/73	1,466,000
			1/1/74	31/12/74	1,446,000
			1/1/75	31/12/75	1,416,000
			1/1/76	31/12/76	1,401,000

APPENDIX V (cont'd)

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SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1971

B. PROPANE EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES ANNUAL (BARRELS)
			FROM	TO	
3. Dome Petroleum Limited	GL-31(AO-1) ^(b)	Gretna, Man.	1/1/77	31/12/77	1,366,000
			1/1/78	31/12/78	1,341,000
			1/1/79	31/12/79	1,331,000
			1/1/80	31/12/80	1,411,000
			1/1/81	31/12/81	1,601,000
			1/1/82	31/12/82	1,666,000
			1/1/83	31/12/83	1,626,000
			1/1/84	31/12/84	1,591,000
			1/1/85	31/12/85	1,561,000
			1/1/86	31/12/86	1,536,000
			1/1/87	31/12/87	901,000
			1/1/88	31/12/88	881,000
			1/1/89	31/12/89	856,000
			1/1/90	31/12/90	481,000
			1/1/91	31/12/91	461,000
			1/1/92	31/12/92	456,000
			1/1/93	31/12/93	441,000
			1/1/94	31/10/94	168,600
			1/1/71	31/12/86	839,500
			1/1/87	31/12/87	906,000
			1/1/88	31/12/88	1,216,000
			1/1/89	31/12/89	1,241,000
			1/1/90	31/12/90	1,065,000
			1/1/91	31/12/91	1,045,000
			1/1/92	31/12/92	1,040,000
			1/1/93	31/12/93	1,025,000
			1/1/94	31/10/94	655,000

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APPENDIX V (cont'd)

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SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1971

B. PROPANE

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES ANNUAL (BARRELS)
			FROM	TO	
4. Amoco Canada Petroleum Company Ltd.	GL-32(AO-1) (b)	Gretna, Man.	1/1/71	31/12/93	584,000
			1/1/94	31/10/94	486,400
			1/1/71	31/12/71	783,500
			1/1/72	31/12/72	993,500
5. TransCanada GasProducts Limited	GL-33(AO-1) (a)	Gretna, Man.	1/1/73	31/12/73	1,218,500
			1/1/74	31/12/74	1,237,000
			1/1/75	31/12/75	1,304,500
			1/1/76	31/12/76	1,317,500
			1/1/77	31/12/77	1,318,000
			1/1/78	31/12/78	1,324,500
			1/1/79	31/12/79	1,342,500
			1/1/80	31/12/80	1,365,500
			1/1/81	31/12/81	1,361,500
			1/1/82	31/12/82	1,320,500
			1/1/83	31/12/83	1,048,000
			1/1/84	31/12/84	697,000
			1/1/85	31/12/85	432,500
			1/1/86	31/12/86	118,000
6. TransCanada GasProducts Limited	GL-34(AO-1) (b)	Gretna, Man.	1/1/71	31/12/85	401,500
			1/1/86	31/12/86	335,000
			1/1/87	31/12/87	25,000

(a) This is an export-import licence whereby all propane exported near Gretna, Manitoba must be re-imported near Sarnia, Ontario.

(b) This licence contains a provision which allows re-importation near Sarnia, Ontario of all or part of the propane exported near Gretna, Manitoba.

* * * *

APPENDIX VI

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED EXPORTS	REMAINING UNDER LICENCES (a)
	DAILY (McF)	ANNUAL (MMcf)	1967	1968	1969	1970	1971			
1. Trans-Canada Pipe Lines Limited GL-1(AO-2)	223,000	74,000	74,700	73,999	74,188	73,741	74,057	786,164	1,410,000	623,836
2. Trans-Canada Pipe Lines Limited GL-2(AO-7)	96,900 ^(b)	20,663 ^(b)	-	455	11,099	28,019	19,170	58,743	N/S	N/A
3. Alberta & Southern Gas Co. Ltd. ^(c) GL-3(AO-3)	458,750	153,270	164,038	159,357	164,895	166,624	167,484	1,534,901	3,826,000	2,291,099
4. Westcoast Transmission Company Limited GL-4(AO-3)	152,000	51,000	47,600	50,437	47,990	49,159	51,215	452,988	1,020,000	567,012
5. Canadian-Montana Pipe Line Company ^(c) GL-5(AO-3)	36,000	10,950	10,225	12,058	11,966	10,992	10,792	109,609	273,750	164,141

APPENDIX VI

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS EXPORTER AND LICENCE/ORDER	(MMcf)						CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
	MAXIMUM DAILY (Mcf)	ANNUAL (MMcf)	1967	1968	1969	1970	1971		
6. Niagara Gas Transmission Limited GL-6(AO-6)	23,000 (d)	5,520 (d)	3,994	4,394	5,361	5,495	5,946	121,190	85,463
7. Patrick T. Buckley GL-7(AO-1) (f)	(g)	10	2	2	--	--	--	N/S	N/A
8. Canadian-Montana Pipe Line Company GL-8(AO-1)	99,460	19,892	16,579	17,345	17,176	17,429	16,021	220,000	24,224
9. Alberta & Southern Gas Co. Ltd. GL-16(AO-1) 1/11/66 to 31/10/67 1/11/67 to 31/10/89	113,125 226,250	37,415 74,830	42,068	75,833	52,769	77,058	65,517 (319,498)	1,614,000	1,294,502
10. Canadian-Montana Pipe Line Company (c) GL-17(AO-1) 1/11/66 to 31/10/67 1/11/67 to 31/10/89	12,000 24,000	3,650 7,300	3,966	7,232	6,405	7,326	7,195 (32,737)	164,250	131,513
									... 3

APPENDIX VI (cont'd)

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EXPORTS OF NATURAL GAS AND PROPANE

APPENDIX VI (cont'd)											
A. NATURAL GAS		MAXIMUM		(MMcf)					(a)		
EXPORTER AND LICENCE/ORDER		DAILY (Mcft)	ANNUAL (MMcf)	1967	1968	1969	1970	1971	CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED EXPORTS	REMAINING UNDER LICENCES
11.	Trans-Canada Pipe Lines Limited GL-18(AO-3) 22/11/65 to 31/10/68 ⁽ⁱ⁾ 1/11/66 to 31/10/89	25,000 143,000	8,000 52,300	2,525 6,493	2,089 41,108	43,604	47,547	42,855	7,999) 181,607)	1,200,000	1,010,394
12.	Trans-Canada Pipe Lines Limited GL-19(AO-2)	17,700	6,500	613	1,452	2,095	2,532	2,820	9,782	108,000	98,218
13.	Trans-Canada Pipe Lines Limited GL-20(AO-6)	87,600	32,100	-	1,073	19,895	36,990	30,492	88,450	765,000	676,550
14.	Trans-Canada Pipe Lines Limited ^(j) GL-21(AO-5)	N/S	247,782	-	19,906	159,449	230,392	222,465	632,212	6,000,000	5,367,788
15.	Trans-Canada Pipe Lines Limited GL-22(AO-4)	N/S	N/S	-	2,592	-	-	-	2,592	3,000	N/A
...											
4											

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APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS	EXPORTER AND LICENCE/ORDER	MAXIMUM					(MMcf)					CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
		DAILY (McF)	ANNUAL (MMcf)				1967	1968	1969	1970	1971			
16.	Westcoast Transmission Company Limited PC1955-958 (AO-2) (k) 1955 to 31/12/65 1/1/66 to 2/10/77	304,000 303,450	100,000 N/S				118,783	109,152	103,163	104,361	85,892	724,280 110,520	N/A	N/A
17.	Westcoast Transmission Company Limited GL-23(AO-7) (k) 1/11/66 to 31/10/67 1/11/67 to 21/ 2/68 22/2/68 to 31/10/88	101,150 101,150 202,300	36,920 24,579 74,040	( ( (			21,645	39,693	68,775	69,737	57,262	257,112)	N/A	N/A
18.	Alberta & Southern Gas Co. Ltd. GL-24(AO-2) 1/11/68 to 31/10/69 1/11/69 to 31/10/91 1/11/91 to 31/10/93	121,000 236,000 135,400	38,900 77,900 44,600	(((-	6,173	46,445	50,644	60,002	163,264	1,841,900	1,678,636

APPENDIX VI (cont'd)

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EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

EXPORTER AND LICENCE/ORDER	MAXIMUM		CUMULATIVE TO 31/12/66	(MMcf)					CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED EXPORTS	REMAINING UNDER LICENCES
	DAILY (Mc)	ANNUAL (MMcf)		1967	1968	1969	1970	1971			
19. Canadian-Montana Pipe Line Company GL-25(AO-2)											
1/11/68 to 31/10/69	12,000	3,650	(	-	-	4,283	6,572	7,195	)	172,650	154,600
1/11/69 to 31/10/91	24,000	7,300	()		
1/11/91 to 31/10/93	13,800	4,200	()		
20. ICG Transmission Limited GL-28	1,634	337	-	-	-	-	10	5	15	8,084	8,069
21. ICG Transmission Limited GL-29	22,023	7,715	-	-	-	-	-	7,109	7,109	192,820	185,711
22. ICG Transmission Limited GL-30 ⁽¹⁾	36,366	12,144	-	-	-	-	45	9,100	9,145	299,990	290,845
23. Alberta & Southern Gas Co. Ltd. GL-35	205,000	67,500	-	-	-	-	10,155	61,000	71,155	1,012,500	941,345
24. Canadian-Montana Pipe Line Company GL-36	12,000	3,650	-	-	-	-	241	3,445	3,686	54,750	51,064
											... 6

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
	DAILY (Mcf)	ANNUAL (MMcf)	1967	1968	1969	1970	1971			
25. Trans-Canada Pipe Lines Limited GL-37(AO-1)	195,800	71,663	-	-	-	11,944	68,155	80,099	1,433,256	1,353,157
26. Trans-Canada Pipe Lines Limited GL-38(AO-1)	50,000	18,300	-	-	-	2,332	18,250	20,582	366,000	345,418
27. Trans-Canada Pipe Lines Limited GL-39(AO-1)	7,200	2,635	-	-	-	439	2,572	3,011	52,704	49,693
28. Westcoast Transmission Company Limited GL-40(AO-1) (k)	75,863	27,770	-	-	-	-	2,560	2,560	N/A	N/A
29. Westcoast Transmission Company Limited GL-41 (k) 1/11/71 to 31/10/72 1/11/72 to 31/10/89	733,338 809,200	254,982 281,359	-	-	-	-	43,421	43,421	5,042,860	4,999,439

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APPENDIX VI (cont'd)

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EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS	EXPORTER AND LICENCE/ORDER	MAXIMUM		CUMULATIVE TO 31/12/66	(MMcf)					CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
		DAILY (Mcf)	ANNUAL (MMcf)		1967	1968	1969	1970	1971			
30.	Trans-Canada Pipe Lines Limited GL-42(j) 15/4/71 to 31/10/71 1/11/71 to 31/10/94	N/S N/S	8,218 92,218	( (	- -	- -	- -	- -	1971 7,310 10,387	17,697	2,129,232	2,111,535
31.	Trans-Canada Pipe Lines Limited GL-43	N/S	17,000	-	-	-	-	-	347	347	340,000	339,653
32.	Patrick T. Buckley GO-1-68(f)	(m)	5	-	-	-	-	-	-	-	N/S	N/A
33.	Union Gas Company of Canada, Limited EO-2-65	N/S	N/S	55	-	-	-	-	-	55	200	N/A
34.	Trans-Canada Pipe Lines Limited EO-1-70	N/S	N/S	-	-	-	-	25	-	25	40	N/A
35.	Trans-Canada Pipe Lines Limited EO-6-70	N/S	N/S	-	-	-	-	124	-	124	125	N/A
36.	Gaz Metropolitan, inc. EO-2-70(AO-1)	N/A	N/A	-	-	-	-	151	-	151	N/A	N/A
												... 8

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS		MAXIMUM		(MMcf)							CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
		DAILY (McF)	ANNUAL (MMcf)	1967	1968	1969	1970	1971					
37.	Gaz Metropolitain, inc. EO-3-70(AO-1)	N/A	N/A	-	-	-	108	-	108	N/A	N/A	N/A	
38.	Gaz Metropolitain, inc. EO-5-70(AO-1)	N/A	N/A	-	-	-	374	240	614	N/A	N/A	N/A	
39.	Gaz Metropolitain, inc. EO-8-70	N/A	N/A	-	-	-	57	93	150	N/A	N/A	N/A	
40.	Gaz Metropolitain, inc. EO-2-71	N/A	N/A	-	-	-	-	491	491	N/A	N/A	N/A	
41.	Gaz Metropolitain, inc. EO-3-71	N/A	N/A	-	-	-	-	537	537	N/A	N/A	N/A	
42.	Gaz Metropolitain, inc. EO-4-71	N/A	N/A	-	-	-	-	75	75	N/A	N/A	N/A	
<hr/>													
Gross Exports				2,355,302	513,231	624,350	839,558	1,010,623	1,161,477	6,504,541			
Deduct exports for Re-import:													
Item 14, GL-21 (j)				-	-	19,906	159,449	230,392	222,465	632,212			
Item 22, GL-30 (1)				-	-	-	-	45	9,100	9,145			
Item 30, GL-42 (j)				-	-	-	-	-	17,697	17,697			
<hr/>													
Net Exports				2,355,302	513,231	604,444	680,109	780,186	912,215	5,845,487			

APPENDIX VI (cont'd)EXPORTS OF NATURAL GAS AND PROPANEA. NATURAL GASFOOTNOTES

- (a) It may not be possible to export total volumes remaining under licences due to restrictions on peak day and annual volumes.
- (b) This licence authorizes an export of 30,000 MMcf in the period 1/11/70 to 31/3/72 and an additional export of 15,000 MMcf on an interruptible basis in the year commencing 1 November 1970.
- (c) Volumes exceed licenced annual amounts due to make-up of accumulated shortfalls from previous years as authorized by licence.
- (d) This licence authorizes daily and annual exports of 30,000 Mcf and 6,700 MMcf respectively during the period 23/12/70 to 31/12/71.
- (e) Includes 1 MMcf authorized export in 1962 prior to September 7, 1962 under GL-6(AO-3) effective at that time.
- (f) On 1 June 1968 GL-7 was replaced by GO-1-68.
- (g) 1,300 Mcf per month.
- (h) Excludes exports prior to 1/9/60, effective commencement date of licence GL-8.
- (i) Interruptible.

APPENDIX VI (cont'd)EXPORTS OF NATURAL GAS AND PROPANEA. NATURAL GASFOOTNOTES (cont'd)

- (j) This licence authorizes an export at Emerson, Manitoba for re-import at Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.
- (k) On the day that first delivery of gas was made under licence GL-41, licences PC1955-958, GL-23 and GL-40 were revoked.
- (l) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
- (m) 1,000 Mcf per month.
- N/S Not specified
- N/A Not applicable
- Amount too small to be expressed.

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

B. PROPANE	EXPORTER	LICENCE/ORDER	TERM OF LICENCE/ORDER		MAXIMUM ANNUAL EXPORT VOLUME (Barrels)	1971 EXPORTS (Barrels)
			FROM	TO		
1.	Dome Petroleum Limited	GL-26(AO-2) (a)	1/1/71 1/1/72	31/12/71 31/12/89	2,565,500 See Appendix V	1,195,829
2.	Amoco Canada Petroleum Company Ltd.	GL-27(AO-2) (a)	1/1/71 1/1/72	31/12/71 31/10/94	1,636,000 See Appendix V	1,190,606
3.	Dome Petroleum Limited	GL-31(AO-1) (b)	1/1/71 1/1/72	31/12/71 31/12/94	839,500 See Appendix V	
4.	Amoco Canada Petroleum Company Ltd.	GL-32(AO-1) (b)	1/1/71 1/1/72	31/12/71 31/10/94	584,000 See Appendix V	
5.	TransCanada GasProducts Ltd.	GL-33(AO-1) (a)	1/1/71 1/1/72	31/12/71 31/12/86	783,500 See Appendix V	62,151
6.	TransCanada GasProducts Ltd.	GL-34(AO-1) (b)	1/1/71 1/1/72	31/12/71 31/12/87	401,500 See Appendix V	

(a) This is an export-import licence whereby all propane exported near Gretna, Manitoba must be re-imported near Sarnia, Ontario.

(b) This licence contains a provision which allows re-importation near Sarnia, Ontario of all or part of the propane exported near Gretna, Manitoba.

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APPENDIX VII

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE ISSUED DURING 1971

A. LICENCES - NATURAL GAS IMPORT - SECTION 82				MAXIMUM IMPORT VOLUMES			
APPLICANT	LICENCE NUMBER	DATE OF ISSUE	POINT OF IMPORT	TERM		DAILY (Mcf)	ANNUAL (MMcf)
				FROM	TO		
1. Trans-Canada Pipe Lines Limited	GL-42(a)	15/4/71	(Sault Ste. Marie, and Sarnia, Ont.)	15/4/71	31/10/71	N/S	8,218
				1/11/71	31/10/94	N/S	92,218

(a) This is an export-import licence whereby all gas exported near Emerson, Manitoba, must be re-imported into Canada near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

B. LICENCES - PROPANE IMPORT - SECTION 82

None Issued

C. ORDERS AMENDING EXISTING NATURAL GAS IMPORT LICENCES - SECTION 17

None Issued

APPENDIX VII (cont'd)NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE ISSUED DURING 1971D. ORDERS AMENDING EXISTING PROPANE IMPORT LICENCES - SECTION 17

APPLICANT	LICENCE NUMBER	DATE OF ISSUE	COMMENTS
1. Dome Petroleum Limited	AO-2-GL-26	2/2/71	(i) Amendment revising volumes (upwards).
2. Pan American Canada Oil Company, Ltd.	AO-2-GL-27	7/10/71	(i) Amendment changing the name of the licensee to Amoco Canada Petroleum Company Ltd.
3. Dome Petroleum Limited	AO-1-GL-31	18/8/71	(i) Amendment allowing the export to the U.S. at Sarnia, Ontario any part of the quantities re-imported into Canada at Sarnia.
4. Pan American Canada Oil Company, Ltd.	AO-1-GL-32	18/8/71	(i) Amendment allowing the export to the U.S. at Sarnia, Ontario any part of the quantities re-imported into Canada at Sarnia. (ii) Amendment changing the name of the licensee to Amoco Canada Petroleum Company Ltd.
5. TransCanada GasProducts Limited	AO-1-GL-33	2/2/71	(i) Amendment revising volumes (upwards). (ii) Amendment extending terminal date from 31/12/85 to 31/12/86.
6. TransCanada GasProducts Limited	AO-1-GL-34	18/8/71	(i) Amendment allowing the export to the U.S. at Sarnia, Ontario any part of the quantities re-imported into Canada at Sarnia.

E. ORDERS - NATURAL GAS IMPORT - PART VI REGULATIONS - SECTION 17

None Issued

F. ORDERS AMENDING EXISTING NATURAL GAS IMPORT ORDERS - SECTION 17

APPLICANT	ORDER NUMBER	DATE OF ISSUE	COMMENTS
1. Canadian Western Natural Gas Company Limited	AO-1-GO-6-66	21/9/71	(i) Amendment changing the name of the licensee from Milk River Gas Company Limited.

* * * *

APPENDIX VIII

SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1971

A. NATURAL GAS	IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUMES		
				FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (MMcf)
1.	Union Gas Company of Canada, Limited	GL1-1	Ojibway, Ont.	1/2/65	5/11/76	55,000	15,500	170,000
2.	Border Utilities Limited	GO-2-66	Coutts, Alta.	2/6/66	14/9/85	1,000	N/S	N/S
3.	Canadian Western Natural Gas Company Limited	GO-6-66(AO-1)	Coutts, Alta.	22/9/66	14/9/85	1,000	N/S	N/S
4.	Trans-Canada Pipe Lines Limited	GL-21(AO-5) ^(a)	(Sault Ste. Marie, and Sarnia, Ont.)	5/11/68	31/10/91	N/S	247,782	6,000,000
5.	ICG Transmission Limited	GL-30 ^(b)	Rainy River, Ont.	1/11/70	31/10/95	36,366	12,144	299,990
6.	Trans-Canada Pipe Lines Limited	GL-42 ^(a)	(Sault Ste. Marie, and Sarnia, Ont.)	15/4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	2,129,232

(a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(b) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

N/S Not specified.

APPENDIX VIII (cont'd)

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SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1971

B. PROPANE	IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUMES ANNUAL (BARRELS)
				FROM	TO	
1. Dome Petroleum Limited		GL-26(AO-2)(a)	Sarnia, Ont.	1/1/70	31/12/70	1,800,000
				1/1/71	31/12/71	2,565,500
				1/1/72	31/12/72	2,630,500
				1/1/73	31/12/73	2,830,500
				1/1/74	31/12/74	2,829,000
				1/1/75	31/12/75	2,866,500
				1/1/76	31/12/76	2,864,500
				1/1/77	31/12/77	2,830,000
				1/1/78	31/12/78	2,811,500
				1/1/79	31/12/79	2,819,500
				1/1/80	31/12/80	2,922,500
				1/1/81	31/12/81	3,108,500
				1/1/82	31/12/82	3,132,500
				1/1/83	31/12/83	2,820,000
				1/1/84	31/12/84	2,434,000
				1/1/85	31/12/85	2,139,500
				1/1/86	31/12/86	1,800,000
				1/1/87	31/12/87	775,000
				1/1/88	31/12/88	249,000
				1/1/89	31/12/89	199,000
2. Amoco Canada Petroleum Company Ltd.		GL-27(AO-2)(a)	Sarnia, Ont.	1/1/70	31/12/70	1,800,000
				1/1/71	31/12/71	1,636,000
				1/1/72	31/12/72	1,491,000
				1/1/73	31/12/73	1,466,000
				1/1/74	31/12/74	1,446,000
				1/1/75	31/12/75	1,416,000
				1/1/76	31/12/76	1,401,000
				1/1/77	31/12/77	1,366,000

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APPENDIX VIII (cont'd)

Page 3

SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1971

B. PROPANE	IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUMES ANNUAL (BARRELS)
				FROM	TO	
3. Dome Petroleum Limited		GL-31(AO-1) (b)	Sarnia, Ont.	1/1/78	31/12/78	1,341,000
				1/1/79	31/12/79	1,331,000
				1/1/80	31/12/80	1,411,000
				1/1/81	31/12/81	1,601,000
				1/1/82	31/12/82	1,666,000
				1/1/83	31/12/83	1,626,000
				1/1/84	31/12/84	1,591,000
				1/1/85	31/12/85	1,561,000
				1/1/86	31/12/86	1,536,000
				1/1/87	31/12/87	901,000
				1/1/88	31/12/88	881,000
				1/1/89	31/12/89	856,000
				1/1/90	31/12/90	481,000
				1/1/91	31/12/91	461,000
				1/1/92	31/12/92	456,000
				1/1/93	31/12/93	441,000
				1/1/94	31/10/94	168,600
				1/1/71	31/12/86	839,500
				1/1/87	31/12/87	906,000
				1/1/88	31/12/88	1,216,000
				1/1/89	31/12/89	1,241,000
				1/1/90	31/12/90	1,065,000
				1/1/91	31/12/91	1,045,000
				1/1/92	31/12/92	1,040,000
				1/1/93	31/12/93	1,025,000
				1/1/94	31/10/94	655,000
4. Amoco Canada Petroleum Company Ltd.		GL-32(AO-1) (b)	Sarnia, Ont.	1/1/71	31/12/93	584,000
				1/1/94	31/10/94	486,400

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APPENDIX VIII (cont'd)

SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1971

B. PROPANE	IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUMES ANNUAL (BARRELS)
				FROM	TO	
5. TransCanada GasProducts Limited		GL-33(AO-1)(a)	Sarnia, Ont.	1/1/71	31/12/71	783,500
				1/1/72	31/12/72	993,500
				1/1/73	31/12/73	1,218,500
				1/1/74	31/12/74	1,237,000
				1/1/75	31/12/75	1,304,500
				1/1/76	31/12/76	1,317,500
				1/1/77	31/12/77	1,318,000
				1/1/78	31/12/78	1,324,500
				1/1/79	31/12/79	1,342,500
				1/1/80	31/12/80	1,365,500
				1/1/81	31/12/81	1,361,500
				1/1/82	31/12/82	1,320,500
				1/1/83	31/12/83	1,048,000
				1/1/84	31/12/84	697,000
				1/1/85	31/12/85	432,500
				1/1/86	31/12/86	118,000
6. TransCanada GasProducts Limited		GL-34(AO-1)(b)	Sarnia, Ont.	1/1/71	31/12/85	401,500
				1/1/86	31/12/86	335,000
				1/1/87	31/12/87	25,000

- (a) This is an export-import licence whereby all propane exported near Gretna, Manitoba, must be re-imported near Sarnia, Ontario.
- (b) This licence contains a provision which allows re-importation near Sarnia, Ontario, of all or part of the propane exported near Gretna, Manitoba.

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APPENDIX IX

IMPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS IMPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/66	CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED IMPORTS	REMAINING UNDER LICENCES
	DAILY (Mc)	ANNUAL (MMcf)	1967	1968	1969	1970	1971				
1. Coutts Gas Company Limited PC1955-1742	N/S	120	-	-	-	-	-	797	797	2,340	N/A
2. Border Utilities Limited GO-2-66	1,000	N/S	33	32	36	35	36	26	198	N/S	N/A
3. Canadian Western Natural Gas Company Limited GO-6-66(AO-1)	1,000	N/S	73	72	76	74	77	62	434	N/S	N/A
4. Union Gas Company of Canada, Limited PC1956-1848	N/S	5,500	2,316	-	-	-	-	70,247	72,563	N/S	N/A
5. Union Gas Company of Canada, Limited GL1-1	55,000	15,500	12,814	15,192	11,449	10,625	14,236	17,995	82,311	167,042 (b)	84,731

APPENDIX IX

APPENDIX IX (cont'd)

IMPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS	IMPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED IMPORTS	REMAINING (a) UNDER LICENCES
		DAILY (McF)	ANNUAL (MMcf)	1967	1968	1969	1970	1971			
6.	Trans-Canada Pipe Lines Limited GL1-2(AO-2)	N/S	25,500								
	1/11/65 to 1/11/66	N/S	30,400							86,500	N/A
	1/11/66 to 1/11/67	N/S	15,300			5,054	126	-	77,166)		
	1/11/67 to 1/11/68	N/S	10,200								
	1/11/68 to 1/11/69	N/S	5,100								
	1/11/69 to 1/11/70	N/S									
7.	Tecumseh Gas Storage Limited GL1-3	20,000	3,000	2,938	-	-	-	-	5,896	5,896(b)	-
8.	Trans-Canada Pipe Lines Limited GL1-4(AO-6)	N/S	N/S	12,836	47,873	18,320	-	-	79,029	82,303	N/A
9.	Trans-Canada Pipe Lines Limited(c) GL1-21(AO-5)	N/S	247,782	-	19,930	157,207	231,557	223,189	631,883	6,000,000	5,368,117
10.	ICG Transmission Limited, GL-30	36,366	12,144	-	-	-	45	9,100	9,145	299,990	290,845
11.	Trans-Canada Pipe Lines Limited GL-42(c) 15/4/71 to 31/10/71 1/11/71 to 31/10/94	N/S N/S	8,218 92,218	- -	- -	- -	- -	7,310 10,601	17,911))	2,129,232	2,111,321 ...

APPENDIX IX (cont'd)

IMPORTS OF NATURAL GAS AND PROPANE

APPENDIX IX (cont'd)													
A. NATURAL GAS		(Mmcf)							(a)				
		MAXIMUM		CUMULATIVE TO 31/12/66	1967	1968	1969	1970	1971	CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED IMPORTS	REMAINING UNDER LICENCES	
IMPORTER AND LICENCE/ORDER	DAILY (Mcf)	ANNUAL (Mmcf)											
12. Trans-Canada Pipe Lines Limited EO-2-62	N/S	N/S	2	-	-	-	-	-	-	2	5	N/A	
13. Trans-Canada Pipe Lines Limited EO-1-63	70,000	N/S	199	-	-	-	-	-	-	199	1,000	N/A	
14. Union Gas Company of Canada, Limited EO-2-63	N/S	N/S	55	-	-	-	-	-	-	55	55	-	
15. Union Gas Company of Canada, Limited EO-3-63	N/S	N/S	1,083	-	-	-	-	-	-	1,083	1,965 ^(b)	N/A	
16. Trans-Canada Pipe Lines Limited EO-1-64	140,000	N/S	2,511	-	-	-	-	-	-	2,511	2,500	N/A	
17. Trans-Canada Pipe Lines Limited EO-2-64(AO-1)	150,000	N/S	1,756	-	-	-	-	-	-	1,756	3,450	N/A	
													4

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IMPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

IMPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)						CUMULATIVE TO 31/12/71	TOTAL AUTHORIZED IMPORTS	REMAINING (a) UNDER LICENCES
	DAILY (McF)	ANNUAL (MMcf)	1967	1968	1969	1970	1971				
18. Union Gas Company of Canada, Limited EO-2-66(AO-1)	N/S	N/S	6,540	-	-	-	-	7,861	7,861 (b)	-	
19. Union Gas Company of Canada, Limited EO-1-67	N/S	N/S	2,974	4,887	-	-	-	7,861	7,861 (b)	-	
20. Trans-Canada Pipe Lines Limited EO-2-67	N/S	N/S	389	-	-	-	-	389	500	N/A	
21. Westcoast Transmission Company Limited EO-4-70	N/A	N/A	-	-	-	1	-	1	N/A	-	
<hr/>											
Gross Imports			127,950	70,456	101,485	192,142	242,463	264,549	999,045		
Deduct Re-import of Exports:			-	-	19,930	157,207	231,557	223,189	631,883		
Item 9, GL-21 (c)			-	-	-	-	45	9,100	9,145		
Item 10, GL-30 (d)			-	-	-	-	-	17,911	17,911		
Item 11, GL-42 (c)			-	-	-	-	-	-	-		
<hr/>											
Net Imports			127,950	70,456	81,555	34,935	10,861	14,349	340,106		

APPENDIX IX (cont'd)

IMPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

FOOTNOTES:

- (a) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.
- (b) Converted from "wet base" to "dry base" for purpose of comparability.
- (c) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.
- (d) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

N/S Not specified.

N/A Not applicable.

APPENDIX IX (cont'd)

IMPORTS OF NATURAL GAS AND PROPANE

B. PROPANE	IMPORTER	LICENCE/ORDER	TERM OF LICENCE/ORDER		MAXIMUM ANNUAL IMPORT VOLUME (Barrels)	1971 IMPORTS (Barrels)
			FROM	TO		
1.	Dome Petroleum Limited	GL-26(AO-2) (a)	1/1/71 1/1/72	31/12/71 31/12/89	2,565,500 See Appendix VIII	1,100,370
2.	Amoco Canada Petroleum Company Ltd.	GL-27(AO-2) (a)	1/1/71 1/1/72	31/12/71 31/10/94	1,636,000 See Appendix VIII	1,122,664
3.	Dome Petroleum Limited	GL-31(AO-1) (b)	1/1/71 1/1/72	31/12/71 31/12/94	839,500 See Appendix VIII	
4.	Amoco Canada Petroleum Company Ltd.	GL-32(AO-1) (b)	1/1/71 1/1/72	31/12/71 31/10/94	584,000 See Appendix VIII	
5.	TransCanada GasProducts Ltd.	GL-33(AO-1) (a)	1/1/71 1/1/72	31/12/71 31/12/86	783,500 See Appendix VIII	16,762
6.	TransCanada GasProducts Ltd.	GL-34(AO-1) (b)	1/1/71 1/1/72	31/12/71 31/12/87	401,500 See Appendix VIII	

(a) This is an export-import licence whereby all propane exported near Gretna, Manitoba must be re-imported near Sarnia, Ontario.

(b) This licence contains a provision which allows re-importation near Sarnia, Ontario of all or part of the propane exported near Gretna, Manitoba.

* * * *

APPENDIX X

RECEIPTS OF CANADIAN CRUDE OIL AND EQUIVALENT IN THE UNITED STATES 1970 and 1971

(Barrels of 35 Canadian Gallons)

Districts I-IV	1970		1971	
	Total for Year	Daily Average	Total for Year	Daily Average
American Oil Company	2,916,914	7,992	7,686,629	21,059
American Oil Company	3,990	11	788,236	2,160
American Oil Company	-	-	673,777	1,846
American Petrofina Inc.	-	-	328,600	900
APCO Oil Corporation	437,381	1,198	568,279	1,557
Ashland Oil & Refining Co.	16,360,039	44,822	17,488,741	47,914
Ashland Oil & Refining Co. (a)	790,558	2,166	653,501	1,791
Ashland Oil & Refining Co.	13,682,593	37,489	14,379,859	39,397
Atlantic Richfield Oil Co.	2,835,135	7,767	4,083,983	11,189
Atlantic Richfield Oil Co.	275,480	755	759,725	2,082
Bay Refining Company	5,105,286	13,987	4,430,059	12,137
Big West Oil Company	527,161	1,444	686,986	1,882
Cities Service Oil Co.	3,507,089	9,609	4,193,215	11,488
Clark Oil & Refining Corporation	3,415,199	9,357	8,557,551	23,445
Continental Oil Company	9,172,733	25,131	8,851,652	24,251
Continental Oil Company	1,230,463	3,371	1,432,039	3,923
Continental Oil Company	72,671	199	-	-
CRA Inc.	6,167,861	16,898	6,517,795	17,857
Crystal Refining Company of Carson City Inc.	-	-	403,666	1,106
Derby Refining Company	690,508	1,892	635,177	1,740
Farmers Union Central Exchange Inc.	-	-	157,866	433
Gladioux Refining Inc.	2,155,653	5,906	3,348,106	9,175
Gulf Oil Corporation	272,364	746	352,970	967
Humble Oil & Refining Company	6,765,207	18,535	7,345,767	20,125
Husky Oil Company	2,402,159	6,581	2,546,575	6,977
	381,545	1,045	314,204	858
Whiting, Indiana				
Mandan, N. Dakota				
Sugar Creek, Missouri				
Kansas City, Kansas				
Kansas City, Kansas				
N. Tonawanda, New York				
Canton, Ohio				
St. Paul, Minnesota				
East Chicago, Indiana				
Sinclair, Wyoming				
Bay City, Michigan				
Kevin, Montana				
E. Chicago, Indiana				
Blue Island, Illinois				
Billings, Montana				
Denver, Colorado				
Ponca City, Oklahoma				
Wrenshall, Minnesota				
Phillipsburg, Kansas				
Carson City, Michigan				
Wichita, Kansas				
Laurel, Montana				
Fort Wayne, Indiana				
Toledo, Ohio				
Billings, Montana				
Cheyenne, Wyoming				

APPENDIX X (cont'd)

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RECEIPTS OF CANADIAN CRUDE OIL AND EQUIVALENT IN THE UNITED STATES 1970 and 1971

(Barrels of 35 Canadian Gallons)

	1970			1971		
	Total for Year	Daily Average		Total for Year	Daily Average	
Districts I-IV						
(b)						
Koch Refining Co.			Pine Bend, Minnesota	26,156,561		71,662
Lakehead Pipe Line Co. Inc.			Superior, Wisconsin	217,167		595
Laketon Asphalt Refining Inc.			Laketon, Indiana	543,060		1,488
Leonard Refineries, Inc.			Alma, Michigan	5,535,185		15,165
Little America Refining Co.			Gasper, Wyoming	221,323		606
Marathon Oil Company			Detroit, Michigan	3,966,007		10,866
Midland Co-Op Inc.			Toledo, Ohio	-		-
Mobil Oil Company			Buffalo, New York	13,930,072		38,165
Mobil Oil Company			Woodhaven, Michigan	1,732,908		4,748
Mobil Oil Company			E. Chicago, Indiana	99,745		273
Murphy Oil Corporation			Superior, Wisconsin	10,876,457		29,799
NCR			McPherson, Kansas	346,853		950
Osceola Refining Company			West Branch, Michigan	1,277,156		3,499
Phillips Petroleum Co.			Kansas City, Kansas	1,031,158		2,825
Refinery Corp.			Denver, Colorado	89,298		245
Rock Island Oil Co.			Rock Island, Indiana	189,456		519
Shell Oil Company			Wood River, Illinois	1,883,880		5,161
Skelly Oil Company			El Dorado, Kansas	508,247		1,393
Standard Oil Company (Ohio)			Toledo, Ohio	13,187,372		36,130
Sun Oil Company			Toledo, Ohio	6,227,826		17,063
Texaco Incorporated			Lockport, Illinois	2,450,358		6,713
Union Oil Company of California			Lemont, Illinois	4,025,956		11,030
United Refining Company(c)			Warren, Pennsylvania	4,700,695		12,879
Westco Refining Company			Cut Bank, Montana	9,083		25
Witco Chemical Corporation			Hammond, Indiana	225,596		618
Others				74,249		204
Total Districts I-IV	163,206,195	447,140		196,690,626		538,878
						...

APPENDIX X (cont'd)

RECEIPTS OF CANADIAN CRUDE OIL AND EQUIVALENT IN THE UNITED STATES 1970 and 1971

(Barrels of 35 Canadian Gallons)

	1970		1971	
	Total for Year	Daily Average	Total for Year	Daily Average
District V				
Atlantic Richfield Oil Company			2,044,967	5,603
Douglas Oil Company of California	3,479,662	9,533	2,416,472	6,620
Humble Oil & Refining Company	361,551	991	252,511	692
Mobil Oil Company	22,549,573	61,780	19,166,420	52,511
Phillips Petroleum Company	373,090	1,022	-	-
Shell Oil Company	237,272	650	242,875	665
Standard Oil Company of California	27,793,408	76,146	29,043,557	79,571
Texaco Incorporated	2,008,701	5,503	1,180,121	3,233
	250,977	688	630,534	1,728
	22,570,628	61,837	21,680,705	59,399
Total District V	79,624,862	218,150	76,658,162	210,022
Total U.S.A.	242,831,057	665,290	273,348,788	748,900

- (a) Formerly Northwestern Refining Company
- (b) Formerly Great Northern Oil Company
- (c) Formerly Union Oil Company of California

Source: Company reports to the National Energy Board

APPENDIX X (cont'd)

RECEIPTS OF CANADIAN CRUDE OIL AND EQUIVALENT IN THE UNITED STATES 1970 and 1971

(Barrels of 35 Canadian Gallons)

NOTE:
Prior to 1970, reports carried a table showing Exports rather than Receipts of exported Canadian Crude Oil and Equivalent, as given above. The Exports corresponding to the foregoing Receipts are:

	<u>1970</u>	<u>1971</u>
	164,730,762 bbls	197,110,192 bbls
	79,624,862 bbls	76,658,162 bbls
	244,355,624 bbls	273,768,354 bbls
		540,028 b/d
		210,022 b/d
		750,050 b/d

The differences between Exports and Receipts in the figures for Districts I-IV (primarily due to oil in transit) are as follow:

1970 - 1,524,567 barrels = 4,177 barrels daily
1971 - 419,566 barrels = 1,149 barrels daily

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APPENDIX XI

IMPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS 1970 and 1971 (a)
(Barrels of 35 Canadian gallons per day)

	ATLANTIC PROVINCES	QUEBEC & E. ONTARIO	CENTRAL & W. ONTARIO	PRAIRIES	B.C.	YUKON & N.W. TERRITORIES	TOTAL
Crude Oil	1971 188,415 1970 137,521	452,868 432,326	896 1,256	- -	- -	- -	642,180 571,104
Motor Gasoline	1971 597 1970 732	10,544 13,969	1 0	32 34	- -	33 24	11,207 14,759
Middle Distillates	1971 16,497 1970 25,577	19,089 23,589	2,601 2,500	404 716	2,359 1,124	238 31	41,188 53,536
Heavy Fuels	1971 21,322 1970 29,397	49,608 57,421	2,731 6,299	- -	7,269 8,476	12 7	80,941 101,600
Other Products	1971 2,589 1970 2,674	7,492 11,802	5,852 10,717	201 205	989 1,996	194 62	17,317 27,457
Total Products	1971 41,004 1970 58,380	86,732 106,781	11,185 19,516	636 955	10,617 11,596	477 124	150,653 197,353
Crude Oil and Products	1971 229,420 1970 195,901	539,601 539,108	12,082 20,773	636 955	10,617 11,596	477 124	792,833 768,457

(a) 1970 revised; 1971 subject to revision.

Source: Company reports to the National Energy Board

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APPENDIX XII

IMPORTS AND NET TRANSFERS ^(a) OF PETROLEUM PRODUCTS INTO CENTRAL AND WESTERN ONTARIO 1966 - 1971
(Barrels of 35 Canadian gallons per day)

	MOTOR GASOLINE	MIDDLE DISTILLATES	TOTAL LIGHT OILS	RESIDUAL FUEL OIL	OTHER PRODUCTS	TOTAL RESID. & OTHER PROD.	TOTAL ALL PRODUCTS
1966	3,891	16,295	20,186	16,964	9,199	26,163	46,349
1967	5,276	19,018	24,294	14,726	13,955	28,681	52,975
1968	6,684	24,249	30,933	15,074	14,783	29,857	60,790
1969	8,247	19,708	27,955	17,666	16,626	34,292	62,247
1970 ^(r)	9,495	18,357	27,852	22,922	16,389	39,311	67,163
1971 ^(b)	5,623	12,479	18,102	21,407	9,637	31,044	49,146

(a) Reported as transfers from Quebec and Maritimes Provinces to central and western Ontario.

(b) Subject to revision.

(r) revised

Source: Company reports to the National Energy Board

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APPENDIX XIII

PIPE LINE LEAKS, BREAKS AND MALFUNCTIONS

The following is a summary of leaks, breaks, malfunctions and other pipe line incidents reported to the Board during 1971 by companies under the jurisdiction of the National Energy Board:

<u>Origin of Reported Incidents</u>	<u>Number of Incidents</u>
Internal and external corrosion of pipe and equipment	3
Defective Mill Welds	3
Defective Field Welds	4
Pipe Material Defects	2
Defective Equipment and Piping	3
Miscellaneous	3
	<hr/>
TOTAL	18
	<hr/> <hr/>

APPENDIX XIV

NEW LICENCES AND ORDERS TO EXPORT ELECTRIC POWER AND ENERGY DURING 1971

A. NEW LICENCES ISSUED IN 1971 PURSUANT TO SECTION 82

None Issued

B. NEW ORDERS ISSUED IN 1971 PURSUANT TO SECTION 6A OF THE REGULATIONS UNDER PART VI OF THE ACT*

APPLICANT	CLASS	KILOWATTS	ANNUAL KILOWATTHOURS (MILLIONS)	TERM FROM DATE OF ISSUE - MONTHS	ISSUED	ORDER NUMBER
1. Manitoba Hydro	Firm	12	15	36	8/7/71	ELO-94

* Under Section 6A the Board may by order authorize the exportation of not more than 4,000 kilowatts of electrical power and not more than 20,000 kilowatthours per year of electrical energy for a term not exceeding three years upon such terms and conditions as the Board may prescribe.

APPENDIX XIV (cont'd)

NEW LICENCES AND ORDERS TO EXPORT ELECTRIC POWER AND ENERGY DURING 1971

C. AMENDING ORDERS ISSUED IN 1971 RELATIVE TO ELECTRIC POWER EXPORT LICENCES

APPLICANT	ASSOCIATED LICENCE	ISSUED	ORDER NUMBER
1. Ontario-Minnesota Pulp and Paper Company Limited	EL-28	23/6/71	AO-3-EL-28
2. Ontario-Minnesota Pulp and Paper Company Limited	EL-28	14/12/71	AO-4-EL-28
3. Cedars Rapids Transmission Company	EL-44	14/12/71	AO-1-EL-44

D. AMENDING ORDERS ISSUED IN 1971 RELATIVE TO ELECTRIC POWER EXPORT ORDERS

APPLICANT	ASSOCIATED ORDER	ISSUED	ORDER NUMBER
1. Hydro-Quebec	ELO-91	30/9/71	AO-1-ELO-91

* * * *

APPENDIX XV

EXPORTS OF ELECTRIC ENERGY - CALENDAR YEAR 1971

EXPORTER	LICENCE NUMBER	THOUSANDS OF KILOWATTHOURS				REPORTED DOLLAR VALUE OF EXPORT	
		LICENCE AUTHORIZATION		GROSS ENERGY EXPORTED		FIRM	INTERRUPTIBLE
		FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE		
						\$	\$
1. Maine and New Brunswick Electrical Power Company Limited	EL-22	250,000	25,000	82,039	596	831,048.00	95.00
	EL-23						
2. Fraser Companies, Limited	EL-60	300,000	30,000	184,427	-	1,752,056.00	-
	EL-61						
3. The New Brunswick Electric Power Commission	EL-39	225,000		170,659	24,822	1,171,342.00	194,090.00
	EL-40		150,000	20,762	12,410	170,321.00	99,113.00
	EL-41	76,180				(a)	
	EL-42	100,000		76,122		5,008,764.00	
	EL-43	1,000,000		675,859		-	
	EL-51	477,000		-			
	EL-52		2,500,000		85,339	4,973.00	591,875.00
	EL-53	225		143			
SUB TOTAL NEW BRUNSWICK	ELO-88-90						
				1,210,011	123,167	8,938,504.00	885,173.00
4. Cedars Rapids Transmission Company Limited	AO-1-EL-44		500,000		449,596		2,605,365.00
5. Quebec Hydro-Electric Commission	ELO-80 to 86 & 91	556		293		4,330.00	
6. Southern Canada Power Company Limited	AO-3-EL-30		61,250		54,637	142,831.00	299,801.00
	AO-3-EL-31	13,000		11,938			
SUB TOTAL QUEBEC							
				12,231	504,233	147,161.00	2,905,166.00

APPENDIX XV (cont'd)

page 2

EXPORTS OF ELECTRIC ENERGY - CALENDAR YEAR 1971

EXPORTER	LICENCE NUMBER	THOUSANDS OF KILOWATTHOURS				REPORTED DOLLAR VALUE OF EXPORT	
		LICENCE AUTHORIZATION		GROSS ENERGY EXPORTED		FIRM	INTERRUPTIBLE
		FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE		
7. The Hydro-Electric Power Commission of Ontario	EL-32 EL-33 EL-34	15,000	6,500,000 105,000	1,106	3,086,175	2,213.00	27,208,438.00
8. Canadian Niagara Power Company Limited	EL-58 EL-59	307,000	160,000	254,958	134,508	1,515,787.00	605,287.00
9. The Ontario-Minnesota Pulp and Paper Company, Limited	A0-4-EL-28	140,160		132,870		1,087,029.00	
10. The Detroit and Windsor Subway Company	ELO-93	1,000		822		-	
11. The Canadian Transit Company	ELO-87	25		24		-	
SUB TOTAL ONTARIO				389,780	3,220,683	2,605,029.00	27,813,725.00
12. Manitoba-Hydro	EL-54 EL-55 EL-56 EL-57 ELO-94	220,800 350,000 15	100,000 800,000	51,630 39,059 5	25,370 570,723	260,498.00 114,910.00 139.00	51,513.00 3,087,894.00
SUB TOTAL MANITOBA				90,694	596,093	375,547.00	3,139,407.00

APPENDIX XV (cont'd)

... 3

APPENDIX XV (cont'd)

EXPORTS OF ELECTRIC ENERGY - CALENDAR YEAR 1971

EXPORTER	LICENCE NUMBER	THOUSANDS OF KILOWATTHOURS				REPORTED DOLLAR VALUE OF EXPORT	
		LICENCE AUTHORIZATION		GROSS ENERGY EXPORTED		FIRM	INTERRUPTIBLE
		FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE		
13. British Columbia Hydro and Power Authority	EL-46	10,000		6,773		\$ 88,961.00	\$ -
	EL-47	1,000,000		-		-	984,362.00
	EL-48		1,200,000		172,915		-
	EL-49		1,554,000		418,188		94,896.00
	EL-50		4,000,000			10,569.00	
14. Cominco Limited	ELO-92	600		126			
	AO-1-EL-20		500,000		9,173		-
15. West Kootenay Power and Light Company Limited	EL-45		1,500,000		231,064	707.00	807,792.00
	ELO-79	50		38			
SUB TOTAL BRITISH COLUMBIA						100,237.00	1,887,050.00
TOTAL CANADA						12,166,478.00	36,630,521.00

(a) No dollar value. Carrier transfer energy wheeled through Maine, back to New Brunswick.

* * * *

APPENDIX XV (cont'd)

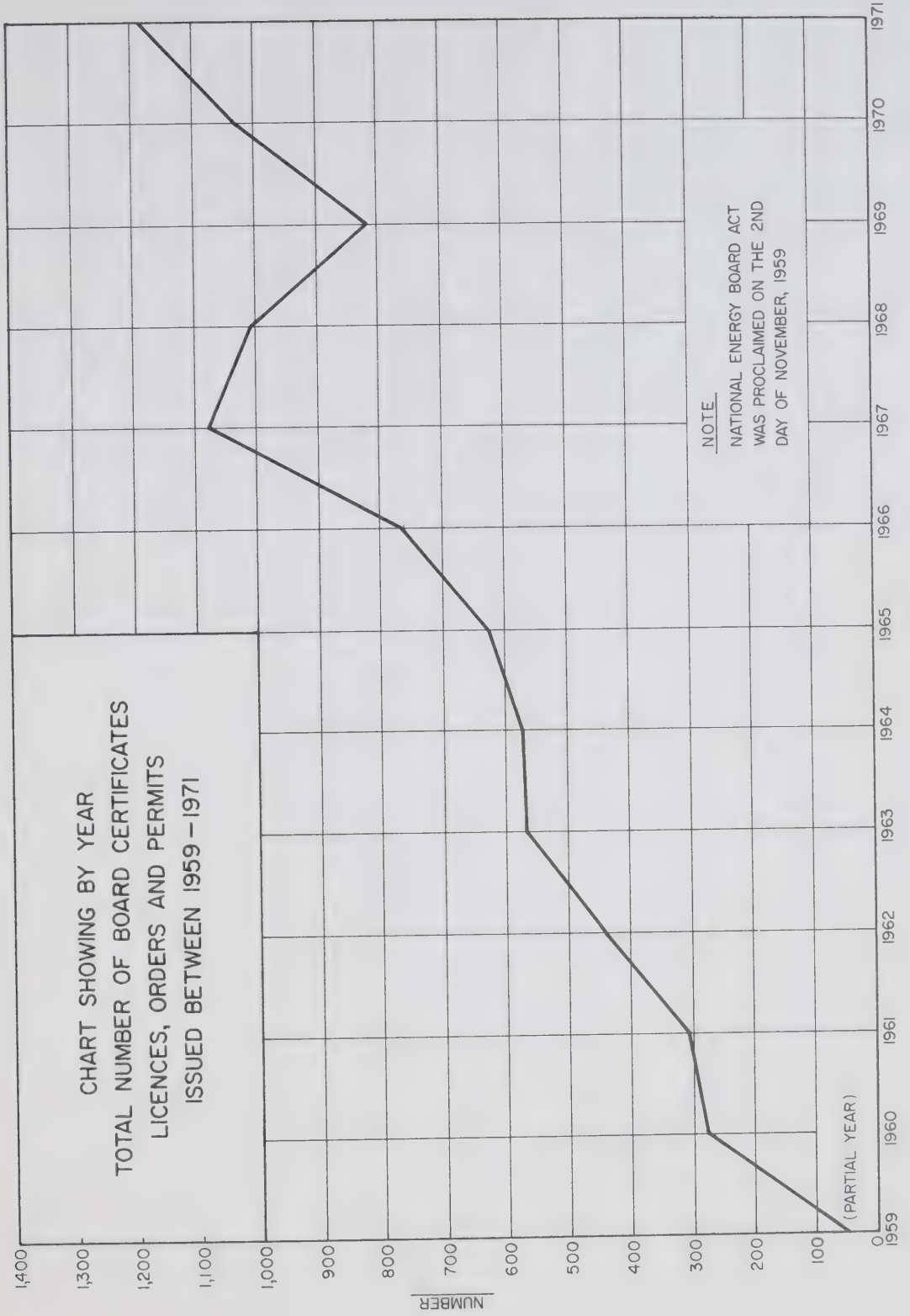
APPENDIX XVI

TOTAL CANADIAN ELECTRIC ENERGY SUPPLY AND TRADE WITH THE UNITED STATES - CALENDAR YEAR 1971

(MILLIONS OF KILOWATTHOURS)

Electric Energy Generation for all Canada	-	215,026 (preliminary)
Electric Energy Importation from U.S.A.	-	<u>3,253</u> "
Total Canadian Electric Energy Supply	-	218,279 "
Electric Energy Export (Gross) to U.S.A.	-	1,710 (firm) - 0.8% Canadian Supply
		5,276 (interruptible) - 2.4% of Canadian Supply

* * * *



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Government
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1972 Annual Report
National Energy Board

NATIONAL ENERGY BOARD

Annual Report

FOR THE YEAR ENDED

31 December 1972

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NATIONAL ENERGY BOARD
OTTAWA, ONTARIO
KIA OE5



OFFICE NATIONAL DE L'ÉNERGIE
OTTAWA, ONTARIO
KIA OE5

File No. 7-2-15

31 March 1973

C A M T T

The Honourable Donald S. Macdonald, P.C.,
Minister of Energy, Mines and Resources,
O T T A W A.

Dear Sir:

In accordance with the provisions of Section 91
of the National Energy Board Act, Statutes of Canada, 1959,
Chapter 46, I have the pleasure to submit the Annual Report
of the Board for the year ended 31 December, 1972.

Yours faithfully,

A handwritten signature in cursive script, reading "Robert D. Howland".

Robert D. Howland,
Chairman.

NATIONAL ENERGY BOARD

R.D. Howland	-	Chairman
D.M. Fraser	-	Vice-Chairman
N.J. Stewart	-	Associate Vice-Chairman
J.G. Stabback	-	Member
A. Cossette Trudel	-	Member
C.G. Edge	-	Member
Robert A. Stead	-	Secretary

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NATIONAL ENERGY BOARD
ANNUAL REPORT

INTRODUCTION

This, the fourteenth Annual Report of the National Energy Board, summarizes activities during the year 1972 in respect of the discharge of its statutory responsibilities.

Since its establishment by Parliament in 1959 the National Energy Board has continued the pursuit of its two main functions, regulatory and advisory, for the broad purpose of ensuring that the best interests of Canada are served in the use of its energy resources. Its regulatory functions fall into two broad categories, namely, those of a quasi-judicial nature and those of an administrative character. The quasi-judicial functions pertain to the granting of certificates of public convenience and necessity authorizing the construction of interprovincial and international pipelines and international power lines, the issuance of licences authorizing the export of gas or power or the import of gas and motor gasoline as well as the regulation of rates, tolls and tariffs of oil and gas pipelines under the Board's jurisdiction. Those regulatory functions of an administrative character include, among others, the issuance of safety orders in respect of pipelines, and the approval of pipeline utility crossings.

Part II of the Act confers broad advisory functions on the Board which include a requirement that it study, report on and recommend to the Minister "such measures within the jurisdiction of the Parliament of Canada as it considers necessary or advisable in the public interest for the control, supervision, conservation, use, marketing and development of energy and sources of energy". The Minister may also require the Board to prepare energy studies and reports. For the purposes of this Part, the Board has the powers of commissioners under Part I of the Inquiries Act.

The Act provides for the appointment of seven full-time members. Each is appointed by the Governor in Council to hold office for a term of seven years, with provision for reappointment until a member reaches the age of seventy.

A number of organizational changes were implemented during the past year. Three senior positions were created to provide coordination of the various aspects of the Board's work. At the same time the Electrical Division of the Engineering Branch was strengthened and made a separate Branch, while an Invironmental Division was added to the Engineering Branch. The Oil Policy Division was also strengthened and created a Branch. At the end of the year a review of the organization of the Operations Research Branch was in process.

At 31 December 1972 the strength of the Board and staff numbered 207 compared with 192 for the same date in 1971. The budget appropriation for the 1972-73 fiscal year totalled \$3,650,000 of which \$3,061,812 was for salaries and \$588,188 was for all other expenses.

EXPLORATION AND DEVELOPMENT - OIL AND GAS

The east-west distance of 3,100 miles between two wildcat wells, one on the Grand Banks 200 miles east of St. John's, the other in the Yukon Territory on the Arctic Coast near the Alaska boundary, testifies to the wide scope of exploratory drilling at the end of 1972. The north-south limits of operations constitute some 2,300 miles between Sable Island at Lat. 44° N. and Ellesmere Island at Lat. 80° N.

Activity increased in the frontier areas, spurred on by the 1971 successes. The traditional areas of the western provinces also witnessed an increased interest in drilling due to the possibility of price increases for natural gas, the need for validation of expiring land rights, and the influx of new drilling funds. For Alberta, the provincial government's wildcat incentives program may have contributed to the upswing.

Some of the more significant developments during 1972 are referred to in the following paragraphs and their location identified on a map at the end of this section.

The Scotian Shelf - Grand Banks sector of the East Coast offshore saw drilling over a span of 800 miles. The easternmost drilling well is 200 miles east of St. John's, Newfoundland (No. 1 on the map). Offset drilling continued

around the 1971 Sable Island discovery to determine the size and extent of the sand reservoirs (No. 2). Several oil and gas shows were reported, two of which were identified as Thebaud and Primrose, southwest and east of Sable Island respectively.

Two deep Mississippian tests on Prince Edward Island were abandoned during the year. No shows were reported (No. 3).

A 14,000 ft. wildcat test, 10 miles east of Pugwash, Nova Scotia spudded in near the end of the year. It is expected to reach the Horton beds of Mississippian age (No. 4).

Several wildcat ventures were drilled and abandoned in the St. Lawrence lowlands of Quebec. Two widely separated wildcats were underway at the end of 1972. One was on the east shore of Lake Champlain just north of the international boundary while the other was in the Gaspé Peninsula 30 miles due north of Matapédia, Quebec (No. 5).

Ontario activity was confined to known productive areas: reefs in Lambton County and gas sands in the Haldimand area, onshore and under Lake Erie. These productive horizons are of Silurian age (No. 6).

Drilling in Manitoba and Saskatchewan was basically limited to field development. Shallow wildcat exploration

for Cretaceous gas in the western parts of Saskatchewan resulted in modest success.

Shallow gas exploration in southeast Alberta continued at a high level. The targets, all Cretaceous sands, contribute only modestly to the growth of reserves.

More importantly, there was renewed interest in the deeper parts of the basin and the foothills where the bulk of Alberta's significant gas reserves are situated.

Some of the more important 1972 Alberta Gas discoveries were: Coleman, dual zone foothills gas (No. 7); Ghost River, Mississippian foothills gas (No. 8); Ricinus, Devonian reef (No. 9); Fir, Triassic carbonate (No. 10); Teepee, Devonian reef (No. 11); and Beaverlodge, Mississippian reef (No. 12).

Apart from one oil discovery in the Windfall area of central Alberta, little success was reported in finding new oil. Enhanced recovery projects are expected to contribute most of the additions to recoverable crude reserves.

New gas plant facilities continued to place additional liquid hydrocarbons on the market in the wake of development of previously discovered wet gas reserves.

The three main plays in British Columbia which continued to attract attention were: Fort St. John, Cretaceous - Triassic; Fort Nelson, Devonian reefs; and Foothills, Triassic and Mississippian.

A high level of drilling resulted in some gas discoveries and gave sufficient encouragement to maintain interest both in exploration and at Crown Reserve sales. Second generation exploratory acreage continued to be acquired in conjunction with an active farm-out program.

The busiest area in the Foothills belt at the end of 1972 was the Monkman Pass sector south of Dawson Creek where five deep tests were drilled within a 20-mile stretch (No. 13). Several other important wildcats were also under way in the foothills farther north.

The usual winter seasonal activity in the general Fort Nelson area saw numerous wildcat and follow-ups on Devonian and shallower unidentified gas trends. Several discoveries were reported but have not been quantified.

The interior of the province saw a renewal of interest. One test was abandoned in the Quesnel area during the summer. A second test in the Bowser Basin northeast of Prince Albert was preparing to spud at the end of the year. Permian carbonate is the target horizon (No. 14).

In the Yukon and Northwest Territories mainland activity was virtually confined to the sector north of the Arctic Circle and more particularly to the Mackenzie Delta. Gas and oil were reported by industry in the course of drilling but there has been no quantification of the reserves

thus generated. There was an increase in the number of rigs in the Delta to a total of 10 at the end of the year.

Fifty miles to the east of the Delta, only one rig was at work on Tuk Peninsula, following up on the oil play started in January 1970. Preparations were under way to commence drilling a new-play wildcat, 100 miles west of the Delta (No. 15) at the end of the year.

The Beaufort Sea continued to be the object of intensive geophysical, ice and sea bottom investigations. Large structures which may contain hydrocarbons have been identified by seismic methods and now await the drill.

For the third consecutive year the Arctic Islands justified industry's enthusiasm; there were two more gas discoveries and oil shows were found at two wildcats. The most significant of these was at Romulus, the northernmost wildcat on Ellesmere Island where three separate zones yielded oil and condensate on test. Romulus is only 120 miles west of tidewater and thus directly accessible to Baffin Bay and the Atlantic (No. 16).

The gas discoveries were at Thor, which also flowed oil (No. 17) and on Melville Island at Hecla (No. 18), west of the first Arctic Islands gas discovery in 1969 at Drake Point. As in the Mackenzie Delta none of these accumulations had been quantified. At the end of 1972,

there were 11 locations or drilling sites in the Arctic, seven of which involved Panarctic Oils Ltd.

Geophysical investigations have revealed an entirely separate geological sub-province, namely, the east-west structural graben occupied by Lancaster and M'Clure Sounds (No. 19). Great thicknesses of sediments are indicated with large flexures. Drilling of this interesting feature is several years in the future.

The value of Western Canadian production of oil, gas and natural gas liquids was \$2.17 billion in 1972 as against \$1.89 billion in 1971 and \$1.63 billion in 1970.

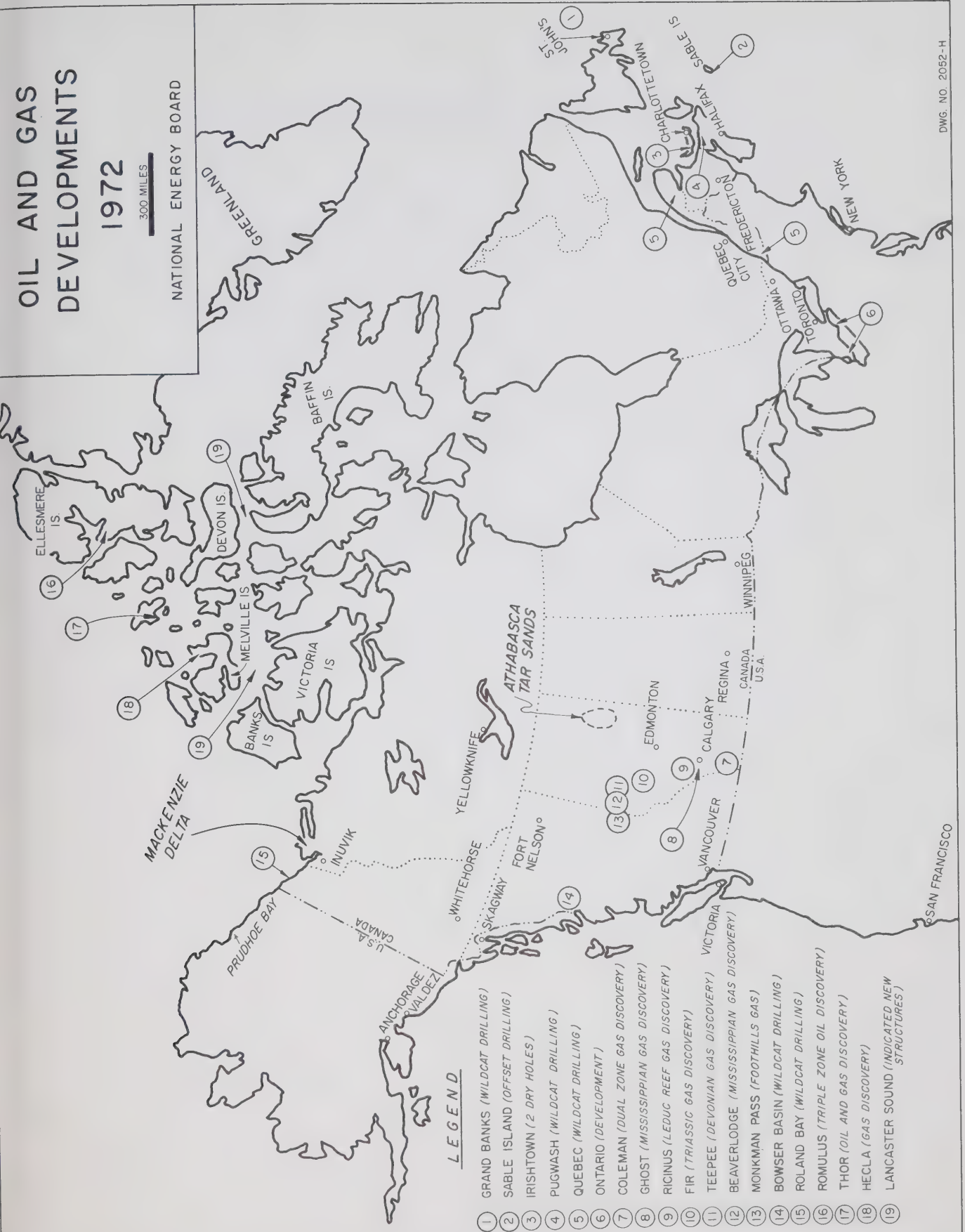
Expenditures for exploration and production, both capital and operating, were \$1.85 billion in 1972 against \$1.70 billion in 1971.

OIL AND GAS DEVELOPMENTS

1972

300 MILES

NATIONAL ENERGY BOARD



OIL AND GAS - PRODUCTION AND MARKETS

Oil

Canadian oil production, exports and imports were again at record levels in 1972.

Total net production of liquid hydrocarbons averaged some 1,820,000 barrels a day in 1972, an increase of 15 per cent. As in the two preceding years, more oil was produced than was found in western Canada and estimated proven remaining reserves of liquid hydrocarbons declined.

Most of the production growth was due to buoyant United States demand: exports of western Canadian crude oil and equivalent increased by 27 per cent to 951,000 barrels daily. The United States quota on imports of crude oil for refining in areas east of the Rockies was increased at the beginning of the year and twice during the year. Demand for Canadian oil on the United States west coast was stimulated by the coming on stream of a new refinery in the Puget Sound area. The record of receipts by United States buyers of Canadian crude oil and equivalent is shown in Appendix X.

The strength of demand for western Canadian oil in 1972 removed any remaining doubts as to the marketability of this oil. Indeed, combined domestic and export demand for western Canadian oil was at times strong enough to tax the capability of production and transportation facilities.

Oil imports, concentrated in Quebec and the Atlantic Provinces, rose to 930,000 barrels daily, for an increase of 14 per cent. There were important changes in the origin, composition and destination of crude oil imports, the Venezuelan share of which fell to less than half. The destination and composition of total imports is shown in Appendix XI. The growth in part reflected a sharp increase in refining of overseas crude for export markets. Exports of petroleum products, mainly fuel oils, refined from foreign crude averaged about 105,000 b/d, an increase of over 150 per cent over the previous year.

In 1972 oil supply in western and central Ontario was again substantially derived from indigenous sources. The record of the import and transfer of foreign origin product into this area is displayed in Appendix XII. This program was instituted a dozen years ago as part of measures adopted to encourage the marketing of western oil. It continues to be an important element in consideration of the security of oil supply to Canadian markets.

The Board maintained the statutory control of motor gasoline imports during the year. A total of 53 licences were issued permitting the importation of 3,480,835 barrels of motor gasoline and motor gasoline blending components. Virtually all of this volume was for consumption in eastern Ontario, Quebec and the Atlantic Provinces.

The Board continued its monitoring of the prices of imported oil and surveillance of the industry's supply planning. The staff completed a five-year forward survey of industry supply planning, covering Ontario, Quebec and the Atlantic Provinces. The survey confirmed that planned additions to refinery capacity in Ontario, as reflected in the survey, would need to be supplemented to achieve an adequate supply of product from indigenous feedstock. In areas east of Ontario, additions to refinery capacity to run foreign crude oil at deep water have been contemplated or are in course of construction with an eye to the export of substantial proportions of output. There is in consequence little concern in regard to the adequacy of refining capacity in eastern Canada. At the same time, developments there clearly raise a wide variety of implications among which are questions on the degree to which export markets for output from such new capacity may be expected to afford future continuity of outlet. The Board's staff took part in integrated consideration of these matters with officials of the various Departments involved.

Gas

Natural gas sales in Canada during 1972 increased by approximately 9.5 per cent. The Province of Ontario experienced the highest rate of growth in sales at 15.3 per

cent, with the Province of Quebec the second highest at 6.3 per cent. These two provinces accounted for over half of the total sales of gas for use in Canada for the year. In absolute terms, however, the Province of Alberta ranked second to Ontario in the increase in net sales, well ahead of the Province of Quebec.

Canadian market gains for natural gas were attributed to a number of factors: the increasing public awareness of air pollution and the implementation of stringent anti-pollution regulations; recent increases in alternate fuel prices; efficient combustion characteristics of natural gas; and the convenience of use of gas.

Exports of natural gas to the United States during 1972 increased by approximately 11 per cent over the previous year, as export purchasers received total annual volumes close to those authorized by the Board under existing export licences.

The Board continued to study existing gas reserves and additions in Canada to maintain current reserve information which, together with the current requirements, provide data for calculating current surplus. Reserve estimates of other governmental agencies and industry are carefully considered by the Board in arriving at its estimate of established Canadian reserves, the term used by the Board to include "proved" and a portion of "probable" reserves.

In 1971 the Board determined that no surplus of indigenous natural gas remained after due allowance had been made for the reasonably foreseeable Canadian requirements, having regard to trends of gas discovery in Canada. There were no major gas discoveries in established or accessible areas in 1972.

In January, 1972 Dome Petroleum Limited appeared before the Board with applications to export, inter alia, 138,917,000 barrels of liquid ethane (231 Bcf of gaseous ethane equivalent) over a 10-year period. This application is unique in that the ethane proposed to be exported is to be an integral constituent of a mixture of natural gas liquids to be exported as feedstock for a reforming process to produce pipeline quality gas at Green Springs, Ohio in the United States. In view of the fact that the ethane component would be removed from the pipeline gas streams destined for Canadian consumption, the Applicant was advised that it must satisfy the Board that it would be in the public interest to consider the surplus status of ethane as a separate matter from the surplus of natural gas. At the end of 1972 the Board still had the application under consideration.

A licence was granted to Consolidated Natural Gas Limited to import gas into Canada from the Tiger Ridge field

in the State of Montana, for export at Emerson, Manitoba. This movement represents a carrier transfer of indigenous United States gas through a Canadian pipeline to the facilities of Northern Natural Gas in Minnesota.

PIPELINE CONSTRUCTION, OPERATION AND REGULATION

Significant construction undertaken during the year 1972 included pipeline facilities installed by Interprovincial Pipe Line Company, Wascana Pipe Line Ltd., Trans Mountain Pipe Line Company Ltd., Trans-Northern Pipe Line Company, Consolidated Pipe Lines Company, TransCanada PipeLines Limited and Westcoast Transmission Company Limited.

Interprovincial's construction program included the installation of approximately 82 miles of 48-inch diameter pipe, approximately 18 miles of 20-inch diameter pipe and 85,000 horsepower in pumping facilities along its pipeline system. Associated with these installations was the construction of 780,000 barrels of storage capacity and associated facilities at various locations.

Supplementing the foregoing construction, Lakehead Pipe Line Co. Inc., a wholly owned subsidiary of Interprovincial, constructed approximately 44 miles of 48-inch diameter pipe and new pumping facilities in the United States part of this pipeline system to handle the increased flow rate from Interprovincial's western system, and into the part of its system in Ontario as well as to United States delivery points.

Wascana Pipe Line Ltd., a newly formed company, constructed a 12-inch diameter pipeline to carry oil from

Regina southward to the international boundary, a distance of approximately 107 miles. Pumping and storage facilities were included in the construction of this pipeline. Wascana Pipe Line Incorporated constructed approximately 58 miles of 12-inch diameter pipe from the international boundary to Poplar, Montana, to receive and transport oil from Wascana Pipe Line Ltd.

Trans Mountain received approval to install additional pumping facilities to increase the supply of oil from Alberta to the Pacific northwest area of the United States.

Trans-Northern constructed approximately 16 miles of 16-inch diameter pipe in the Montreal area to meet the rising demand for refined products in the Dorval airport area and westward from Montreal.

Consolidated installed approximately 131 miles of 16-inch diameter pipe and associated facilities in Canada to connect the Tiger Ridge gas field in Montana to the Trans-Canada Compressor Station No. 9 near Herbert, Saskatchewan. The Canadian portion of this pipeline begins at a point east of Willow Creek, Saskatchewan on the Saskatchewan-Montana border and runs northeastwards to Herbert.

TransCanada was issued a certificate to build approximately 957 miles of new gas transmission line loops during 1972 and 1973. The 1972 portion of the program is

supplement to the original 1972 schedule which was approved in 1971. This supplement consists of approximately 423 miles, including 135 miles of 42-inch diameter pipe in the Provinces of Saskatchewan and Manitoba, 268 miles of 36-inch diameter pipe in the Provinces of Manitoba and Ontario (mostly in Ontario) and 19 miles of 24-inch diameter pipe along the Toronto-Montreal segment of the mainline. TransCanada also added horsepower at three compressor stations. These facilities were required to meet the increasing demands for gas in Canadian markets.

Westcoast extended its main gas gathering line from the Beaver River gas field in northern British Columbia to the Pointed Mountain gas field in the Northwest Territories by installing approximately 34 miles of 20-inch diameter pipe. This is the first gas pipeline in Canada to extend north of the 60th Parallel.

Westcoast increased the mileage of its main gas transmission line by constructing approximately 87 miles of 36-inch diameter pipe, and by adding a new compressor station with 25,000 horsepower, and 12,500 horsepower at the existing compressor station N-3. Both of these stations are located on the Fort Nelson mainline. In addition, Westcoast constructed two additional gas treating trains at the Fort Nelson gas treating plant, each train having a design capacity of 150 MMcf/d.

The safety aspects of design, operation and maintenance of pipelines are of prime concern to the Board. Failures and malfunctions are immediately reported and investigated to determine the cause of failure and to enable steps to be taken to prevent recurrence of similar failures in the future. Board engineers have inspected sites of leaks and have witnessed pressure tests of piping as part of this program. A summary list of incidents which occurred in 1972 is to be found in Appendix XIII.

The Board has now completed draft regulations concerning the design, installation, materials, welding, field pressure testing, operation, maintenance, repair and abandonment of pipelines and accident reports for gas pipelines in Canada. It is expected that these regulations, which are intended to form the basis of safety requirements for pipelines in Canada, including those which may be constructed in the Canadian North, will be approved early in 1973.

The Board staff is continuing to participate in the preparation of amendments to the CSA Standard Z184-1968 for gas transmission and distribution systems. In particular, it participated during 1972 in the preparation of a draft addendum to this CSA Standard for additional requirements for gas pipelines in northern regions.

The Board's engineers have investigated several complaints about noise emanating from the operation of gas compressor stations, and where appropriate, the Board has instructed gas pipeline companies to reduce the sound to tolerable levels.

The Board is continuing to monitor the levels of hydrogen sulphide and sulphur dioxide emitted at a gas treating plant in British Columbia which comes under its jurisdiction to determine whether the maximum levels considered to be safe by the Department of the Environment are being exceeded.

The Board is also working on the development of safety regulations for oil pipelines. These regulations are intended to specify safety requirements more rigorous than the existing CSA Standard Z183-1967. Special requirements for oil pipelines in Arctic regions are being developed.

In connection with the Canadian Government Guidelines first announced in August 1970 and expanded in June 1972 for construction and operation of northern oil and gas pipelines, the Board's staff has been investigating design, technology, feasibility and costs of alternative methods of constructing pipelines in Arctic regions. In cooperation with other federal departments and agencies, concerted efforts were directed towards the establishment

of environmental protection, pollution control and safety standards for pipelines.

In 1972, the Board issued a total of 1,311 certificates, licences, orders and permits. These included 8 certificates of public convenience and necessity; 21 licences and orders for the export of gas and power; 32 orders exempting certain pipeline and power line facilities from certain requirements of the Act; 94 orders approving plans, profiles and books of reference for new pipelines or portions thereof, as well as deviations of existing pipelines; 2 permits allowing the correction of registered plans, profiles and books of reference; 41 orders approving plans for compressor, pump and meter stations; 146 orders granting leave to open for oil or gas pipeline facilities; 4 orders authorizing the operation of existing pipeline facilities at operating pressures higher than those previously permitted; 8 orders approving the sale or conveyance of parts of pipelines; and 688 orders relating to the crossing of and by pipelines with regard to other utilities, highways and railways. Generally speaking these orders relate to the protection of the public and of pipeline facilities and to safety in pipeline operation.

There was an increase of more than 10 per cent in the total number of orders which were issued in 1972 over

the previous year, while, at the same time, the complexity and variety of the applications handled by the Board continued to increase. The annual totals of certificates, licences, orders and permits which the Board has issued since its inception are set out in Appendix XVII. In December 1972 the Board issued its 10,000th order since its inception.

The capital expenditures relating to the 1972 construction of pipelines and power transmission facilities under the Board's jurisdiction are summarized in Appendices I and III.

ELECTRIC POWER

As was mentioned in its 1971 Annual Report, the Board early in 1972 re-heard that part of The Ontario-Minnesota Pulp and Paper Company Limited power export application which dealt with border price. Export licences and a certificate were subsequently issued.

In April the Board heard, at Fredericton, New Brunswick, an application by The New Brunswick Electric Power Commission to export power to Maine Electric Power Company Incorporated. The power would be generated at a new thermal-electric station to be built at Lorneville near Saint John, New Brunswick. This was the first time the Board has been asked to consider the export of power from generating facilities which would be constructed partially to serve the United States market for a limited period. A report to the Governor in Council was made by the Board in July and the licences and certificate issued.

A subsequent application by The New Brunswick Electric Power Commission to export power to Maine Public Service Company and Eastern Maine Electric Cooperative Incorporated, was heard, also in Fredericton, and in August licences were issued.

An application by Cedars Rapids Transmission Company Limited to export electric power was heard in

March, in Cornwall, Ontario. The Applicant subsequently withdrew its application but the matter is still under consideration by the Board and the Applicant.

The Board issued two orders for the export of small amounts of electric power, also two certificates and two exemption orders for minor international power lines. The disposition of all electric power applications dealt with by the Board during 1972 is shown in Appendices II, III and XIV.

The Board continued its active liaison with utilities and other provincial agencies and Canadian companies. The Board's staff continued its participation on the Nelson River Review Committee, the Technical Advisory Committee for the Hydro-Quebec Institute of Research, and the Engineering Review Committee for Tidal Power.

Observers status was maintained in the United States National Electric Reliability Council through Board representation at the quarterly meetings of the Council's executive board.

Board representatives continued to participate actively in the Canadian Standards Association, the Canadian Electrical Association, the Canadian Nuclear Association, the Engineering Institute of Canada, and the Institute of Electrical and Electronic Engineers.

FINANCIAL MATTERS

The application by TransCanada PipeLines Limited for orders to fix the just and reasonable rates or tolls which it could charge with respect to gas sold continued to occupy much of the Board's attention.

Following the Board's decision in 1971 with respect to the determination of the rate base, rate of return and total cost of service, the Board in 1972 turned its attention to the second phase dealing with the consideration of the specific tolls and tariffs necessary to produce the total cost of service in a fair and equitable manner. Hearings on the second phase commenced 6 June and 78 days of hearing took place prior to adjournment on 30 November 1972. Hearings for final argument commenced 22 January and concluded on 25 January, 1973.

In addition to the TransCanada rate application, the tariff and financing aspects of a wide variety of applications were examined. These particularly related to applications for certificates to construct additional pipeline facilities and licences to export ethane, propane and electric power.

The Board considered applications seeking approval of special accounting treatment covering matters such as owning costs of pipeline facilities; advance payments for

natural gas; and deferred depreciation and interest during construction. The Board's Uniform Accounting Regulations for Gas and Oil Pipe Line Companies were reviewed to ensure that current trends in the pipeline industry and the requirements of professional accounting bodies continue to be properly reflected.

The Board continued to carry out a number of studies and to keep under review the price of gas exports as required by Section 11 A of the Regulations made pursuant to Part VI of the Act.

Examinations of the accounts and records of gas and oil pipelines under the Board's jurisdiction were continued during the year, as was the review of agreements and contracts covering the sale, purchase of and transportation of natural gas by pipeline companies.

Liaison with financial and regulatory agencies, both Canadian and international, was maintained for the purpose of enabling the Board to be well informed on financial and regulatory matters relevant to its activities, and of making known to such agencies relevant information about the Board's activities.

SUPPORTING ENERGY STUDIES

Technical and economic studies were made on various aspects of electric power across Canada, with particular reference to developments which may result in requests to construct international power lines and to exchange or export power in the future.

Studies were carried out in connection with tariff and financial matters relating to pipeline companies generally, long term debt and liquidity studies, the impact of income and other taxes on earnings, and the costs associated with capital stock issues.

In the conduct of its regulatory and research activities, the Board's staff increased its use of computer techniques in support of engineering studies, economic forecasting and financial analyses. With respect to gas pipeline rates programs were developed to simulate the allocation of commodity and capacity costs by rate zones. Indexes of public hearing proceedings were computerized for ease and efficiency of retrieval. In conjunction with Statistics Canada, information on crude oil and refined petroleum products was computerized for analysis and reporting.

Quantitative analysis and operations research techniques were applied to the relationship between energy consumption and the Gross National Product. Pricing

alternatives for Canadian energy resources and the relative position of natural gas in domestic and foreign markets were examined.

In conjunction with the Bank of Canada and Statistics Canada, mathematical models were tested with regard to the potential to gauge the impact of capital inflows required by the Canadian oil and gas industry on the balance of payments and the exchange rate.

A multi-purpose quantitative study was undertaken dealing with various aspects of past and future natural gas supply involving exploration for new reserves, appreciation of existing reserves, transportation to markets and protection of Canadian requirements.

The Board's staff continued the assessment of methods of long term forecasting with emphasis on the application of technological forecasting techniques to energy supply and requirements studies. Technological and social developments affecting energy demand for the period to the year 2000, in the areas of transportation, urbanization and the use of leisure time were investigated.

APPENDIX I

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1972

NATURAL GAS PIPELINES

<u>APPLICANT</u>	<u>FACILITIES</u>	<u>ESTIMATED COST</u>	<u>HEARD</u>	<u>ISSUED</u>	<u>CERTIFICATE NO.</u>
1. Westcoast Transmission Company Limited	(A) Approximately 62.6 miles of 36-inch diameter pipeline in the Province of British Columbia.				
	(B) Approximately 34.1 miles of 20-inch diameter pipeline in the Northwest and Yukon Territories and in the Province of British Columbia.	\$54,108,000	commencing 23 November 1971	18 January 1972	GC-46 (as amended)
	(C) Additional compressor station in the Province of British Columbia.				
	(D) Additional compression facilities in the Province of British Columbia.				
	(E) Additional gas treating facilities in the Province of British Columbia.				
2. Consolidated Pipe Lines Company	(A) Approximately 131 miles of 16-inch diameter pipeline in the Province of Saskatchewan.	\$10,299,000	commencing 7 December 1971	4 May 1972	GC-47
	(B) New compressor station in the Province of Saskatchewan.				
	(C) Certain measuring and metering facilities in the Provinces of Saskatchewan and Manitoba.				

APPENDIX I (cont'd)

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1972

NATURAL GAS PIPELINES (cont'd)

<u>APPLICANT</u>	<u>FACILITIES</u>	<u>ESTIMATED COST</u>	<u>HEARD</u>	<u>ISSUED</u>	<u>CERTIFICATE NO.</u>
3. TransCanada Pipelines Limited	I. 1972 Construction				
	(A) Approximately 135.2 miles of 42-inch diameter pipeline in the Provinces of Saskatchewan and Manitoba.				
	(B) Approximately 268.3 miles of 36-inch diameter pipeline in the Provinces of Manitoba and Ontario.	2 Year Program \$406,776,900	commencing 14 December 1971	4 May 1972	GC-48 (as amended)
	(C) Approximately 19.3 miles of 24-inch diameter pipeline in the Province of Ontario.				
	(D) Conversion of a compressor unit in the Province of Saskatchewan.				
	(E) Certain piping modifications in the Province of Saskatchewan.				
	(F) Placing of portable compression facilities in the Province of Ontario.				
	II. 1973 Construction				
	(A) Approximately 148.9 miles of 42-inch diameter pipeline in the Provinces of Saskatchewan and Manitoba.				

APPENDIX I (cont'd)

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1972

NATURAL GAS PIPELINES (cont'd)		ESTIMATED COST	HEARD	ISSUED	CERTIFICATE NO.
APPLICANT					
3.	TransCanada Pipelines Limited (cont'd)				
	FACILITIES				
	II. 1973 Construction (cont'd)				
	(B) Approximately 347.9 miles of 36-inch diameter pipeline in the Provinces of Manitoba and Ontario.				
	(C) Approximately 37.2 miles of 24-inch diameter pipeline in the Province of Ontario.				
	(D) New compressor station in the Province of Ontario.				
	(E) Additional compression facilities in the Provinces of Saskatchewan and Ontario.				
	(F) Upgrading of existing compression facilities in the Province of Ontario.				

APPENDIX I (cont'd)

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1972

OIL PIPELINES

APPLICANT	FACILITIES	ESTIMATED COST	HEARD	ISSUED	CERTIFICATE NO.
1. Interprovincial Pipe Line Company	(A) Approximately 78.84 miles* of 48-inch diameter pipeline in the Provinces of Alberta, Saskatchewan and Manitoba.) (B) Approximately 17.83 miles of 20-inch diameter pipeline in the Province of Ontario.) (C) Certain cross-over piping in the Province of Manitoba.) (D) Additional pumping facilities in the Provinces of Alberta, Saskatchewan and Manitoba.) (E) Additional storage facilities in the Province of Alberta.)	\$47,550,000	5 April 1972	6 June 1972	OC-25 (as amended)
*) The Company installed in addition a total of approximately 2.5 miles of 48-inch diameter pipeline for greater ease of tie-in to its existing system.					
2. Wascana Pipe Line Ltd.	(A) Approximately 107 miles of 12-inch diameter pipeline, (B) Approximately one mile of 12-inch diameter pipeline, (C) New pump station and terminal, all in the Province of Saskatchewan.)	\$ 5,937,900	commencing 25 April 1972	11 July 1972	OC-26

APPENDIX I (cont'd)

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1972

INTERNATIONAL POWER LINES

APPLICANT

1. The Ontario-Minnesota Pulp and Paper Company Limited

FACILITIES

One international power line to extend approximately 0.235 mile from the terminal structure of the 120 kv power line of the Hydro-Electric Power Commission of Ontario on the mill property of the Company at Fort Frances, Ontario, to a point on the international boundary near the International Bridge spanning the Rainy River at Fort Frances, and connecting at that point with a power line to be constructed by Boise Cascade Corporation. This line would be built for 120 kv, three-phase operation, using one 477,000 circular mil ACSR conductor per phase and supported on steel transmission towers.

Amending order to Certificate EC-III-2 to provide for a change in the size of conductors from 3/0 ACSR to 336,400 circular mil ACSR on the international power line designated as circuit No. 6904 between the Tinker Generating Station of the Company and a point on the international boundary line between Canada and the United States of America approximately one-half mile north of the Four Falls Customs Station in the Province of New Brunswick.

2. Maine and New Brunswick Electrical Power Company, Limited

N/A Not applicable

* * * * *

ESTIMATED COST	HEARD	ISSUED	CERTIFICATE NO.
\$ 50,000	15 February 1972	11 July 1972	EC-III-11
\$ 34,300	N/A	9 May 1972	AO-1-EC-III-2

APPENDIX II

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY ISSUED DURING 1972, PURSUANT TO
SUBSECTION 31(1) OF AN ACT TO AMEND THE NATIONAL ENERGY BOARD ACT, CHAPTER 27, REVISED
STATUTES OF CANADA, 1970

INTERNATIONAL POWER LINES

<u>APPLICANT</u>	<u>FACILITIES</u>	<u>ISSUED</u>	<u>CERTIFICATE NO.</u>
1. British Columbia Hydro and Power Authority	One international power line which extends approximately 250 feet from the local distribution system in the vicinity of Kingsgate, British Columbia to a point on the international boundary at Kingsgate. This line operates at 60 hertz, 7,200 volts and consists of one single-phase circuit of two conductors of size No. 4 ACSR, supported on wood poles.	27 January, 1972	EC-53
2. Southern Utilities Co., Ltd.	One international power line which extends approximately 148 feet from the local distribution system in the Village of Coutts, Alberta, to a point on the international boundary line in Township 1, Range 15, West of the 4th Meridian, in the Province of Alberta. This line operates at 60 hertz, 7,200 volts and consists of one single circuit of two phases comprising three 3/8 inch twisted copper conductors, supported on wood poles.	7 December, 1972	EC-54

APPENDIX II (cont'd)

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY ISSUED DURING 1972, PURSUANT TO
SUBSECTION 31(1) OF AN ACT TO AMEND THE NATIONAL ENERGY BOARD ACT, CHAPTER 27, REVISED
STATUTES OF CANADA, 1970

INTERNATIONAL POWER LINES

<u>APPLICANT</u>	<u>FACILITIES</u>	<u>ISSUED</u>	<u>CERTIFICATE NO.</u>
3. British Columbia Hydro and Power Authority	Amending order to Certificate EC-51 to provide for a change in the name of the certificate holder from "Lincoln Electric Cooperative Inc." to "British Columbia Hydro and Power Authority".	27 January, 1972	AO-1-EC-51
4. British Columbia Hydro and Power Authority	Amending order to Certificate EC-52 to provide for a change in the name of the certificate holder from "Lincoln Electric Cooperative Inc." to "British Columbia Hydro and Power Authority".	27 January, 1972	AO-1-EC-52

* * * *

APPENDIX III

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1972

CLASS "B" CONSTRUCTION

(This is construction which, at the discretion of the Board, may be the subject of a specific exemption order pursuant to Section 49.)

NATURAL GAS PIPELINES

- (1) Westcoast Transmission Company Limited, approximately 24.5 miles of 36-inch diameter lines of pipe, at various locations, in the Province of British Columbia, estimated cost \$10,605,410, Order No. XG-1-72, dated 24 February, 1972, as amended.
- (2) Westcoast Transmission Company Limited, a new meter station, to be known as 'Cariboo Pulp and Paper Meter Station (Meter Station No. 32)', and other works in connection therewith, in the Province of British Columbia, estimated cost \$42,500, Order No. XG-2-72, dated 5 May, 1972, as amended.
- (3) Trans-Canada Pipe Lines Limited, now known as TransCanada PipeLines Limited, a new meter station, to be known as 'Marten River Meter Station', and other works connected therewith, including a 12-inch diameter connecting line, in the Province of Ontario, estimated cost \$139,500, Order No. XG-3-72, dated 6 July, 1972.
- (4) Trans-Canada Pipe Lines Limited, now known as TransCanada PipeLines Limited, a new meter station, to be known as 'Brooklin Meter Station', and other works connected therewith, in the Province of Ontario, estimated cost \$36,900, Order No. XG-4-72, dated 6 July, 1972, as amended.
- (5) Westcoast Transmission Company Limited, approximately 3.15 miles of 16-inch diameter line of pipe, in the Province of British Columbia, estimated cost \$687,200, Order No. XG-5-72, dated 13 July, 1972.

APPENDIX III (cont'd)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1972

CLASS "B" CONSTRUCTION

NATURAL GAS PIPELINES (cont'd)

- (6) Westcoast Transmission Company Limited, approximately 6.6 miles of 36-inch diameter line of pipe, in the Province of British Columbia, estimated cost \$149,000, Order No. XG-6-72, dated 30 July, 1972, as amended.
- (7) Westcoast Transmission Company Limited, certain additions and modifications at its existing 'Huntingdon Meter Station', in the Province of British Columbia, estimated cost \$250,000, Order No. XG-7-72, dated 31 August, 1972.
- (8) Trans-Canada Pipe Lines Limited, now known as TransCanada PipeLines Limited, 2.1 miles of 24-inch diameter line of pipe and works connected therewith, in the Province of Ontario, estimated cost \$517,700, Order No. XG-8-72, dated 7 September, 1972, as amended.
- (9) Westcoast Transmission Company Limited, additional compression facilities at the 'Laprise Creek Field Compressor Station' and works in connection therewith, and approximately 2.2 miles of 6 5/8-inch diameter line of pipe, all in the Province of British Columbia, estimated cost \$901,000, Order No. XG-9-72, dated 26 October, 1972.
- (10) TransCanada PipeLines Limited, approximately 1.0 mile of 24-inch diameter line of pipe, in the Province of Ontario, estimated cost \$231,000, Order No. XG-10-72, dated 2 November, 1972.

OIL PIPELINES

- (1) Trans-Northern Pipe Line Company, a new pump station, to be known as 'North Toronto Pump and Meter Station', and other works connected therewith, in the Province of Ontario, estimated cost \$285,500, Order No. XO-1-72, dated 20 April, 1972.

APPENDIX III (cont'd)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1972

CLASS "B" CONSTRUCTION

OIL PIPELINES (cont'd)

- (2) Trans-Northern Pipe Line Company, 4,130 feet of 12-inch diameter line of pipe, in the Province of Ontario, (to be built in 1973), estimated cost \$92,000, Order No. XO-2-72, dated 6 July, 1972, as amended.
- (3) Trans-Northern Pipe Line Company, approximately 16 miles of 16-inch diameter line of pipe and certain modifications and additions to its existing 'Montreal Pump Station and Terminal' and its existing 'Ste-Rose Junction', all in the Province of Quebec, estimated cost \$2,850,000, Order No. XO-3-72, dated 11 July, 1972, as amended.
- (4) Interprovincial Pipe Line Company, approximately 0.59 of a mile of 48-inch diameter line of pipe, in the Province of Manitoba, estimated cost \$160,000, Order No. XO-4-72, dated 27 July, 1972.
- (5) Trans-Northern Pipe Line Company, additional pumping facilities and other works connected therewith, at the existing 'Port Credit Pump Station', in the Province of Ontario, estimated cost \$55,000, Order No. XO-5-72, dated 24 August, 1972.
- (6) Trans-Northern Pipe Line Company, additional pumping facilities and other works connected therewith at its existing 'Clarkson Pump Station', in the Province of Ontario, estimated cost \$110,000, Order No. XO-6-72, dated 24 August, 1972, as amended.
- (7) Wascana Pipe Line Ltd., certain temporary stand-by pumping facilities and other works connected therewith at its existing 'Regina Pump Station and Terminal', all in the Province of Saskatchewan, estimated cost not applicable, rental agreement, Order No. XO-7-72, dated 15 December, 1972.
- (8) Trans Mountain Pipe Line Company Ltd., a new pump station to be known as 'Stony Plain Pump Station' and other works connected therewith in the Province of Alberta, and additional pumping facilities at:
six locations in the Province of Alberta and at
eight locations in the Province of British Columbia,
estimated cost \$5,650,000, Order No. XO-8-72, dated 15 December, 1972.

APPENDIX III (cont'd)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1972

CLASS "C" CONSTRUCTION

(This is miscellaneous construction of a routine character which, at the discretion of the Board, may be the subject of an annual blanket exemption order pursuant to Section 49.)

NATURAL GAS PIPELINES

- (1) Alberta Natural Gas Company Ltd., for certain miscellaneous facilities to be added to its pipeline system in the Provinces of Alberta and British Columbia, estimated cost \$627,280, Order No. XGM-1-72, dated 6 April, 1972.
- (2) Petroleum Transmission Company, for certain miscellaneous facilities to be added to its pipeline system in the Provinces of Alberta, Saskatchewan and Manitoba, estimated cost \$15,000, Order No. XGM-2-72, dated 27 April, 1972.
- (3) ICG Transmission Limited, for certain miscellaneous facilities to be added to its pipeline system in the Provinces of Manitoba and Ontario, estimated cost \$17,184.59, Order No. XGM-3-72, dated 1 June, 1972.
- (4) Westcoast Transmission Company Limited, for certain miscellaneous facilities to be added to its pipeline system in the Provinces of Alberta and British Columbia, estimated cost \$3,205,295, Order No. XGM-4-72, dated 15 June, 1972.
- (5) Trans-Canada Pipe Lines Limited, now known as TransCanada PipeLines Limited, for certain miscellaneous facilities to be added to its pipeline system in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Quebec, estimated cost \$24,961,357, Order No. XGM-5-72, dated 15 June, 1972.

APPENDIX III (cont'd)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1972

CLASS "C" CONSTRUCTION

OIL PIPELINES

- (1) Montreal Pipe Line Company Limited, for certain miscellaneous facilities to be added to its pipeline system in the Province of Quebec, estimated cost \$30,400, Order No. KOM-1-72, dated 24 February, 1972.
- (2) Trans Mountain Oil Pipe Line Company, now known as Trans Mountain Pipe Line Company Ltd., for certain miscellaneous facilities to be added to its pipeline system in the Provinces of Alberta and British Columbia, estimated cost \$945,615, Order No. KOM-2-72, dated 2 March, 1972.
- (3) Sun Pipe Line Company, for certain miscellaneous facilities to be added to its pipeline system in the Province of Ontario, estimated cost \$2,970, Order No. KOM-3-72, dated 2 March, 1972.
- (4) Interprovincial Pipe Line Company, for certain miscellaneous facilities to be added to its pipeline system in the Provinces of Alberta, Saskatchewan, Manitoba and Ontario, estimated cost \$980,000, Order No. KOM-4-72, dated 9 March, 1972.
- (5) Westspur Pipe Line Company, for certain miscellaneous facilities to be added to its pipeline system in the Provinces of Saskatchewan and Manitoba, estimated cost \$397,000, Order No. KOM-5-72, dated 13 April, 1972.
- (6) Trans-Northern Pipe Line Company, for certain miscellaneous facilities to be added to its pipeline system in the Provinces of Ontario and Quebec, estimated cost \$190,000, Order No. KOM-6-72, dated 20 April, 1972.
- (7) Yukon Pipelines Limited, for certain miscellaneous facilities to be added to its pipeline system in the Province of British Columbia and in the Yukon Territory, estimated cost \$45,000, Order No. KOM-7-72, dated 14 September, 1972.

APPENDIX III (cont'd)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1972

INTERNATIONAL POWER LINES

- (1) The New Brunswick Electric Power Commission - One international power line which extends from a point near the shore of Campobello Island, in the province of New Brunswick, to a point on the international boundary, south of the Roosevelt International Bridge. Order No. XE-1-72, dated 9 March, 1972.
- (2) The Hydro-Electric Power Commission of Ontario - One international power line from a point on the shore of Bingham Island in front of the Township of Landsdowne in the County of Leeds in the province of Ontario, to a point on the international boundary, in the river between Bingham Island and Wellesly Island in the Town of Orleans in the State of New York. Order No. XE-2-72, dated 7 December, 1972.

APPENDIX IV

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE ISSUED DURING 1972

A. LICENCES - NATURAL GAS EXPORT - SECTION 82

APPLICANT	LICENCE NUMBER	DATE OF ISSUE	POINT OF EXPORT	TERM		MAXIMUM EXPORT VOLUMES		
				FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (MMcf)
1. Consolidated Natural Gas Limited	GL-44(a)	15/3/72	Emerson, Man.	15/3/72	31/10/92	150,000	45,000	669,000

(a) The quantity of gas which is exported under the authority of this licence shall be equal to the quantities of gas which the licensee imports pursuant to Licence No. GLI-5.

B. LICENCES - PROPANE EXPORT - SECTION 82

None Issued

APPENDIX IV (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE ISSUED DURING 1972

C. ORDERS AMENDING EXISTING NATURAL GAS EXPORT LICENCES - SECTION 17

APPLICANT	ORDER NUMBER	DATE OF ISSUE	COMMENTS
1. ICG Transmission Limited	AO-1-GL-28	29/2/72	(i) Licence amendment providing for the transfer of a certain portion of the daily volumes of gas authorized for export under GL-28 for export under GL-29 during the period 21/1/72 to 1/4/72.
2. ICG Transmission Limited	AO-1-GL-29	29/2/72	(i) Licence amendment providing for the transfer of a certain portion of the daily volumes authorized under GL-28 to GL-29 during the period from 21/1/72 to 1/4/72.

D. ORDERS AMENDING EXISTING PROPANE EXPORT LICENCES - SECTION 17

None Issued

APPENDIX IV (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE ISSUED DURING 1972

E. ORDERS - NATURAL GAS EXPORT - PART VI REGULATIONS - SECTION 18

APPLICANT	ORDER NUMBER	DATE OF ISSUE	POINT OF EXPORT	TERM		EXPORT VOLUMES
				FROM	TO	
1. Trans-Canada Pipe Lines Limited	EO-2-72 (a)	12/4/72	Niagara Falls, Ont.	12/4/72	30/4/72	100,000 Mcf/d
2. Gaz Métropolitain, inc.	EO-3-72	6/7/72	Montreal, Que. (truck)	6/7/72	31/8/72	600,000 U.S. gallons LNG*
3. Trans-Canada Pipe Lines Limited	EO-5-72 (b)	22/8/72	Niagara Falls, Ont.	22/8/72	31/8/72	40,000 Mcf
4. Gaz Métropolitain, inc.	EO-7-72	26/10/72	Montreal, Que. (truck)	26/10/72	31/12/72	6,000,000 U.S. gallons LNG*

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APPENDIX IV (cont'd)

F. AMENDING ORDERS - NATURAL GAS EXPORT - PART VI REGULATIONS - SECTION 18

APPLICANT	ORDER NUMBER	DATE OF ISSUE	COMMENTS
1. TransCanada Pipelines Limited	AO-1-EO-5-72	21/9/72	(i) Amendment extending terminal date from 31/8/72 to 30/9/72.

* LNG - liquefied natural gas

(a) This order authorized the export of the same volume of gas imported from Tennessee Gas Pipeline Company pursuant to Order No. EO-1-72.

(b) This order authorized the export to Tennessee Gas Pipeline Company the same volume of gas as Trans-Canada Pipe Lines Limited received pursuant to Order No. EO-4-72.

* * * * *

APPENDIX V

SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1972

A. NATURAL GAS

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES		
			FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (MMcf)
1. Trans-Canada Pipe Lines Limited	GL-1(AO-2)	Emerson, Man.	11/ 4/72	14/ 5/81	223,000	74,000	1,410,000
2. Alberta & Southern Gas Co. Ltd.	GL-3(AO-3)	Kingsgate, B.C.	31/10/61	31/10/86	458,750	153,270	3,826,000
3. Westcoast Transmission Company Limited	GL-4(AO-3)	Kingsgate, B.C.	10/12/61	10/12/81	152,000	51,000	1,020,000
4. Canadian-Montana Pipe Line Company	GL-5(AO-3)	Cardston, Alta.	31/10/61	31/10/86	36,000	10,950	273,750
5. Niagara Gas Transmission Limited	GL-6(AO-6)	Cornwall, Ont.	7/ 9/62	30/ 6/87	23,000(a)	5,520(a)	121,190
6. Canadian-Montana Pipe Line Company	GL-8(AO-1)	Aden, Alta.	1/ 9/60	14/ 5/74	99,460	19,892	220,000
7. Alberta & Southern Gas Co. Ltd.	GL-16(AO-1)	Kingsgate, B.C.	1/11/66 1/11/67	31/10/67 31/10/89	113,125 226,250	37,415 74,830	1,614,000
8. Canadian-Montana Pipe Line Company	GL-17(AO-1)	Cardston, Alta.	1/11/67 1/11/67	31/10/67 31/10/89	12,000 24,000	3,650 7,300	164,250
9. Trans-Canada Pipe Lines Limited	GL-18(AO-3)	Emerson, Man.	22/11/65 1/11/66	31/10/68 31/10/89	25,000 143,000	8,000(b) 52,300	1,200,000
10. Trans-Canada Pipe Lines Limited	GL-19(AO-2)	Philipsburg, Que.	1/11/65	31/10/89	17,700	6,500	108,000

APPENDIX V

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APPENDIX V (cont'd)

SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1972

A. NATURAL GAS

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES		
			FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (Mcf)
11. Trans-Canada Pipe Lines Limited	GL-20(AO-6)	Emerson, Man.	21/11/68	31/10/91	87,600	32,100	765,000
12. Trans-Canada Pipe Lines Limited	GL-21(AO-5) ^(c)	Emerson, Man.	5/11/68	31/10/91	N/S	247,782	6,000,000
13. Alberta & Southern Gas Co. Ltd.	GL-24(AO-2)	Kingsgate, B.C.	1/11/68	31/10/69	121,000	38,900)	1,841,900
			1/11/69	31/10/91	236,000	77,900)	
			1/11/91	31/10/93	135,400	44,600)	
14. Canadian-Montana Pipe Line Co.	GL-25(AO-2)	Cardston, Alta.	1/11/68	31/10/69	12,000	3,650)	172,650
			1/11/69	31/10/91	24,000	7,300)	
			1/11/91	31/10/93	13,800	4,200)	
15. Patrick T. Buckley	GO-1-68	Coutts, Alta.	1/ 6/68	31/ 5/73	(d)	5	N/S
16. ICG Transmission Limited	GL-28(AO-1)	Sprague, Man.	1/11/70	31/10/95	1,634	337	8,084
17. ICG Transmission Limited	GL-29(AO-1)	Port Frances, Ont.	1/11/70	31/10/95	22,023	7,715	192,820
18. ICG Transmission Limited	GL-30 ^(e)	Sprague, Man.	1/11/70	31/10/95	36,366	12,144	299,990
19. Alberta & Southern Gas Co. Ltd.	GL-35	Kingsgate, B.C.	1/11/70	31/10/85	205,000	67,500	1,012,500
20. Canadian-Montana Pipe Line Co.	GL-36	Cardston, Alta.	1/11/70	31/10/85	12,000	3,650	54,750
21. Trans-Canada Pipe Lines Limited	GL-37(AO-1)	Emerson, Man.	1/11/70	31/10/90	195,800	71,663	1,433,256
22. Trans-Canada Pipe Lines Limited	GL-38(AO-1)	Emerson, Man.	1/11/70	31/10/90	50,000	18,300	366,000

APPENDIX V (cont'd)

SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1972

A. NATURAL GAS

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES		
			FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (MMcf)
23. Trans-Canada Pipe Lines Limited	GL-39(AO-1)	Emerson, Man.	1/11/70	31/10/90	7,200	2,635	52,704
24. Westcoast Transmission Company Limited	GL-41	Huntingdon, B.C.	1/11/71 1/11/72	31/10/72 31/10/89	733,338 809,200	254,982) 281,359)	5,042,860
25. Trans-Canada Pipe Lines Limited	GL-42 (c)	Emerson, Man.	15/ 4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218) 92,218)	2,129,232
26. Trans-Canada Pipe Lines Limited	GL-43	Emerson, Man.	1/11/71	31/10/91	N/S	17,000	340,000
27. Consolidated Natural Gas Limited	GL-44 (f)	Emerson, Man.	15/ 3/72	31/10/92	150,000	45,000	669,000
28. TransCanada Pipelines Limited	EO-6-72 (g)	Niagara Falls, Ont.	26/10/72	31/12/72	N/S	N/S	3,000
29. Gaz Métropolitain, inc.	EO-7-72	Montreal, Que.(truck)	26/10/72	31/12/72	N/S	N/S	6,000,000 U.S. gallons LNG*

N/S Not specified.

* Liquefied natural gas.

(a) There was an exception for the period 23/12/70 to 31/12/71 when exports of 30,000 Mcf daily and 6,700 MMcf were authorized.

(b) Interruptible.

(c) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.

(d) Not more than 1 MMcf in any one month.

(e) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(f) This licence authorizes an export near Emerson, Manitoba. The quantity of gas exported under the authority of this licence shall be equal to the quantities of gas which the licensee imports pursuant to licence No. GLL-5.

(g) This licence authorizes an emergency import of gas from Tennessee Gas Pipeline Company during the period 26/10/72 to 31/12/72 to be returned during the period 1/5/73 to 30/9/73.

APPENDIX V (cont'd)

SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1972

B. PROPANE

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER FROM TO	MAXIMUM EXPORT VOLUMES ANNUAL (BARRELS)
1. Dome Petroleum Limited	GL-26(AO-2)(a)	Gretna, Man.	1/1/70 31/12/70 1/1/71 31/12/71 1/1/72 31/12/72 1/1/73 31/12/73 1/1/74 31/12/74 1/1/75 31/12/75 1/1/76 31/12/76 1/1/77 31/12/77 1/1/78 31/12/78 1/1/79 31/12/79 1/1/80 31/12/80 1/1/81 31/12/81 1/1/82 31/12/82 1/1/83 31/12/83 1/1/84 31/12/84 1/1/85 31/12/85 1/1/86 31/12/86 1/1/87 31/12/87 1/1/88 31/12/88 1/1/89 31/12/89	1,800,000 2,565,500 2,630,500 2,830,500 2,829,000 2,866,500 2,864,500 2,830,000 2,811,500 2,819,500 2,922,500 3,108,500 3,132,500 2,820,000 2,434,000 2,139,500 1,800,000 775,000 249,000 199,000
2. Amoco Canada Petroleum Company Ltd.	GL-27(AO-2)(a)	Gretna, Man.	1/1/70 31/12/70 1/1/71 31/12/71 1/1/72 31/12/72 1/1/73 31/12/73 1/1/74 31/12/74 1/1/75 31/12/75 1/1/76 31/12/76	1,800,000 1,636,000 1,491,000 1,466,000 1,446,000 1,416,000 1,401,000

APPENDIX V (cont'd)

SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1972

B. PROPANE	EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES
				FROM	TO	
				1/1/77	31/12/77	1,366,000
				1/1/78	31/12/78	1,341,000
				1/1/79	31/12/79	1,331,000
				1/1/80	31/12/80	1,411,000
				1/1/81	31/12/81	1,601,000
				1/1/82	31/12/82	1,666,000
				1/1/83	31/12/83	1,626,000
				1/1/84	31/12/84	1,591,000
				1/1/85	31/12/85	1,561,000
				1/1/86	31/12/86	1,536,000
				1/1/87	31/12/87	901,000
				1/1/88	31/12/88	881,000
				1/1/89	31/12/89	856,000
				1/1/90	31/12/90	481,000
				1/1/91	31/12/91	461,000
				1/1/92	31/12/92	456,000
				1/1/93	31/12/93	441,000
				1/1/94	31/10/94	168,600
				1/1/71	31/12/86	839,500
				1/1/87	31/12/87	906,000
				1/1/88	31/12/88	1,216,000
				1/1/89	31/12/89	1,241,000
				1/1/90	31/12/90	1,065,000
				1/1/91	31/12/91	1,045,000
				1/1/92	31/12/92	1,040,000
				1/1/93	31/12/93	1,025,000
				1/1/94	31/10/94	655,000
3. Dome Petroleum Limited		GL-31(AO-1) (b)	Gretna, Man. and Sarnia, Ont.			

APPENDIX V (cont'd)

SUBSISTING LICENCES AND ORDERS TO EXPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1972

B. PROPANE

EXPORTER	LICENCES OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES ANNUAL (BARRELS)
			FROM	TO	
4. Amoco Canada Petroleum Company Ltd.	GL-32(AO-1)(b)	Gretna, Man. and Sarnia, Ont.	1/1/71 1/1/94	31/12/93 31/10/94	584,000 486,400
5. TransCanada GasProducts Limited	GL-33(AO-1)(a)	Gretna, Man.	1/1/71 1/1/72 1/1/73 1/1/74 1/1/75 1/1/76 1/1/77 1/1/78 1/1/79 1/1/80 1/1/81 1/1/82 1/1/83 1/1/84 1/1/85 1/1/86	31/12/71 31/12/72 31/12/73 31/12/74 31/12/75 31/12/76 31/12/77 31/12/78 31/12/79 31/12/80 31/12/81 31/12/82 31/12/83 31/12/84 31/12/85 31/12/86	783,500 993,500 1,218,500 1,237,000 1,304,500 1,317,500 1,318,000 1,324,500 1,342,500 1,365,500 1,361,500 1,320,500 1,048,000 697,000 432,500 118,000
6. TransCanada GasProducts Limited	GL-34(AO-1)(b)	Gretna, Man. and Sarnia, Ont.	1/1/71 1/1/86 1/1/87	31/12/85 31/12/86 31/12/87	401,500 335,000 25,000

- (a) This is an export-import licence whereby all propane exported near Gretna, Manitoba must be re-imported near Sarnia, Ontario.
 (b) This licence contains a provision which allows re-importation near Sarnia, Ontario of all or part of the propane exported near Gretna, Manitoba.

* * *

APPENDIX VI

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS		(MMcf)										(a)	
		MAXIMUM		CUMULATIVE TO 31/12/67	1968	1969	1970	1971	1972	CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED EXPORTS	REMAINING UNDER LICENCES	
EXPORTER AND LICENCE/ORDER	DAILY (Mcf)	ANNUAL (MMcf)											
1.	Trans-Canada Pipe Lines Limited GL-1(AO-2)	223,000	74,000	490,179	73,999	74,188	73,741	74,057	73,904	860,068	1,410,000	549,932	
2.	Trans-Canada Pipe Lines Limited GL-2(AO-7)	96,900 ^(b)	20,663 ^(b)	-	455	11,099	28,019	19,170	3,672	62,415	N/S	N/A	
3.	Alberta & Southern Gas Co. Ltd. ^(c) GL-3(AO-3)	458,750	153,270	876,541	159,357	164,895	166,624	167,484	167,436	1,702,337	3,826,000	2,123,663	
4.	Westcoast Transmission Company Limited GL-4(AO-3)	152,000	51,000	254,187	50,437	47,990	49,159	51,215	50,945	503,933	1,020,000	516,067	
5.	Canadian-Montana Pipe Line Company ^(c) GL-5(AO-3)	36,000	10,950	63,801	12,058	11,966	10,992	10,792	12,068	121,677	273,750	152,073	
6.	Niagara Gas Transmission Limited GL-6(AO-6)	23,000 ^(d)	5,520 ^(d)	14,531	4,394	5,361	5,495	5,946	5,899	41,626	121,190	79,564	
7.	Patrick T. Buckley GL-7(AO-1)	(e)	10	20	2	-	-	-	-	22	N/S	N/A	

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)							CUMULATIVE TO 31/12/72	CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
	DAILY (Mcf)	ANNUAL (MMcf)	1968	1969	1970	1971	1972						
8. Canadian-Montana Pipe Line Company GL-8(AO-1)	99,460	19,892	17,345	17,176	17,429	16,021	16,391	212,167			220,000	7,833	
9. Alberta & Southern Gas Co. Ltd. (c) GL-16(AO-1)	113,125	37,415	75,833	52,769	77,058	65,517	74,459	393,957			1,614,000	1,220,043	
10. Canadian-Montana Pipe Line Company (c) GL-17(AO-1)	12,000	3,650	7,232	6,405	7,326	7,195	8,054	40,791			164,250	123,459	
11. Trans-Canada Pipe Lines Limited GL-18(AO-3)	25,000	8,000	2,089	43,604	47,547	42,855	42,578	7,999			1,200,000	967,816	
12. Trans-Canada Pipe Lines Limited GL-19(AO-2)	17,700	6,500	1,452	2,095	2,532	2,820	3,745	13,527			108,000	94,473	

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/67	(a)		
	DAILY (Mcf)	ANNUAL (MMcf)	1968	1969	1970	1971	1972		CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED EXPORTS	REMAINING UNDER LICENCES
13. Trans-Canada Pipe Lines Limited GL-20(AO-6)	87,600	32,100	-	1,073	19,895	36,990	30,492	31,768	120,218	765,000	644,782
14. Trans-Canada Pipe Lines Limited (h) GL-21(AO-5)	N/S	247,782	-	19,906	159,449	230,392	222,465	221,055	853,267	6,000,000	5,146,733
15. Trans-Canada Pipe Lines Limited GL-22(AO-4)	N/S	N/S	-	2,592	-	-	-	-	2,592	3,000	N/A
16. Westcoast Transmission Company Limited PC1955-958 (AO-2) (i) 1955 to 31/12/65 1/1/66 to 2/10/77	304,000 303,450	100,000 N/S	724,280 229,303	109,152	103,163	104,361	85,892	-	724,280 631,871	N/A	N/A
17. Westcoast Transmission Company Limited GL-23(AO-7) (i) 1/11/66 to 31/10/67 1/11/67 to 21/ 2/68 22/ 2/68 to 31/10/88	101,150 101,150 202,300	36,920 24,579 74,040	(21,645 (	39,693	68,775	69,737	57,262	-	257,112))	N/A	N/A

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)							CUMULATIVE TO 31/12/67	CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED EXPORTS	REMAINING UNDER LICENCES (a)
	DAILY (McF)	ANNUAL (MMcf)	1968	1969	1970	1971	1972						
18. Alberta & Southern Gas Co. Ltd. GL-24(AO-2)	121,000	38,900	(
1/11/68 to 31/10/69	236,000	77,900	(
1/11/69 to 31/10/91	135,400	44,600	(	6,173	46,445	50,644	60,002	70,075	233,339)	1,841,900	1,608,561	
1/11/91 to 31/10/93													
19. Canadian-Montana Pipe Line Company GL-25(AO-2)	12,000	3,650	(
1/11/68 to 31/10/69	24,000	7,300	(
1/11/69 to 31/10/91	13,800	4,200	(	-	4,283	6,572	7,195	8,054	26,104)	172,650	146,546	
1/11/91 to 31/10/93													
20. ICG Transmission Limited GL-28(AO-1)	1,634	337	-	-	10	5	135	150	8,084	7,934			
21. ICG Transmission Limited GL-29(AO-1)	22,023	7,715	-	-	-	7,109	8,027	15,136	192,820	177,684			
22. ICG Transmission Limited GL-30(j)	36,366	12,144	-	-	45	9,100	11,500	20,645	299,990	279,345			
23. Alberta & Southern Gas Co. Ltd. GL-35	205,000	67,500	-	-	10,155	61,000	71,920	143,075	1,012,500	869,425			

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)							(a)	
	DAILY (Mc)	ANNUAL (MMcf)	CUMULATIVE TO 31/12/67	1968	1969	1970	1971	1972	CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED EXPORTS	REMAINING UNDER LICENCES
24. Canadian-Montana Pipe Line Company GL-36	12,000	3,650	-	-	-	241	3,445	4,023	7,709	54,750	47,041
25. Trans-Canada Pipe Lines Limited GL-37(AO-1)	195,800	71,663	-	-	-	11,944	68,155	72,143	152,242	1,433,256	1,281,014
26. Trans-Canada Pipe Lines Limited GL-38(AO-1)	50,000	18,300	-	-	-	2,332	18,250	18,300	38,882	366,000	327,118
27. Trans-Canada Pipe Lines Limited GL-39(AO-1)	7,200	2,635	-	-	-	439	2,572	2,635	5,646	52,704	47,058
28. Westcoast Transmission Company Limited GL-40(AO-1) (i)	75,863	27,770	-	-	-	-	2,560	-	2,560	N/A	N/A
29. Westcoast Transmission Company Limited GL-41 (i)	733,338 809,200	254,982 281,359	(-) (-)	-	-	-	43,421	255,496	298,917)	5,042,860	4,743,943
1/11/71 to 31/10/72											
1/11/72 to 31/10/89											

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/72	CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
	DAILY (Mcf)	ANNUAL (MMcf)	1968	1969	1970	1971	1972				
30. Trans-Canada Pipe Lines Limited GL-42 (h) 15/4/71 to 31/10/71 1/11/71 to 31/10/94	N/S N/S	8,218 92,218	- -	- -	- -	7,310 10,387	82,271	7,310 92,658	2,129,232	2,029,264	
31. Trans-Canada Pipe Lines Limited GL-43	N/S	17,000	-	-	-	347	7,536	7,883	340,000	332,117	
32. Consolidated Natural Gas Limited GL-44 (1)	150,000	45,000	-	-	-	-	3	3	669,000	668,997	
33. Patrick T. Buckley GO-1-68	(k)	5	-	-	-	-	-	-	N/S	N/A	
34. Union Gas Company of Canada, Limited EO-2-63	N/S	N/S	-	-	-	-	-	55	200	N/A	
35. Trans-Canada Pipe Lines Limited EO-1-70	N/S	N/S	-	-	25	-	-	25	40	N/A	

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

A. NATURAL GAS	MAXIMUM		(MMcf)							CUMULATIVE TO 31/12/67	CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
	DAILY (Mcf)	ANNUAL (MMcf)	1968	1969	1970	1971	1972						
36. Trans-Canada Pipe Lines Limited EO-6-70	N/S	N/S	-	-	124	-	-	-	-	124	125	N/A	
37. Trans-Canada Pipe Lines Limited EO-2-72	N/S	N/A	-	-	-	-	120	-	-	120	N/S	N/A	
38. Trans-Canada Pipe Lines Limited EO-5-72	40,000	N/S	-	-	-	-	21	-	-	21	40	N/A	
39. Gaz Métropolitain, inc. EO-2-70(AO-1)	N/A	N/A	-	-	151	-	-	-	-	151	N/A	N/A	
40. Gaz Métropolitain, inc. EO-3-70(AO-1)	N/A	N/A	-	-	108	-	-	-	-	108	N/A	N/A	
41. Gaz Métropolitain, inc. EO-5-70(AO-1)	N/A	N/A	-	-	374	240	-	-	-	614	N/A	N/A	
42. Gaz Métropolitain, inc. EO-8-70	N/A	N/A	-	-	57	93	-	-	-	150	N/A	N/A	

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/72	CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
	DAILY (Mcf)	ANNUAL (MMcf)	1968	1969	1970	1971	1972				
43. Gaz Métropolitain, inc. EO-2-71	N/A	N/A	-	-	-	491	-	491		N/A	N/A
44. Gaz Métropolitain, inc. EO-3-71	N/A	N/A	-	-	-	537	-	537		N/A	N/A
45. Gaz Métropolitain, inc. EO-4-71	N/A	N/A	-	-	-	84	-	84		N/A	N/A
46. Gaz Métropolitain, inc. EO-7-72	N/A	N/A	-	-	-	-	247	247		N/A	N/A
Gross Exports			2,868,533	839,558	1,010,623	1,161,486	1,324,480	7,829,030			
Deduct Re-Export of Imports:											
Item 32, GL-44 (1)			-	-	-	-	3	3			
Deduct exports for Re-import:											
Item 14, GL-21 (j)			-	159,449	230,392	222,465	221,055	853,267			
Item 22, GL-30 (1)			-	-	45	9,100	11,500	20,645			
Item 30, GL-42 (j)			-	-	-	17,697	82,271	99,968			
Net Exports			2,868,533	680,109	780,186	912,224	1,009,651	6,855,147			

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

FOOTNOTES

- (a) It may not be possible to export total volumes remaining under licences due to restrictions on peak day and annual volumes.
- (b) This licence authorizes an export of 30,000 MMcf in the period 1/11/70 to 31/3/72 and an additional export of 15,000 MMcf on an interruptible basis in the year commencing 1 November 1970.
- (c) Volumes exceed licenced annual amounts due to make-up of accumulated shortfalls from previous years as authorized by licence.
- (d) This licence authorizes daily and annual exports of 30,000 Mcf and 6,700 MMcf respectively during the period 23/12/70 to 31/12/71.
- (e) 1,300 Mcf per month.
- (f) Excludes exports prior to 1/9/60, effective commencement date of licence GL-8.
- (g) Interruptible.

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

FOOTNOTES (cont'd)

- (h) This licence authorizes an export at Emerson, Manitoba for re-import at Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.
- (i) On the day that first delivery of gas was made under licence GL-41, Licences PC1955-958, GL-23 and GL-40 were revoked.
- (j) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
- (k) 1,000 Mcf per month.
- (l) This licence authorizes the export at Emerson, Manitoba of those volumes imported into Canada pursuant to Licence GLI-5.
- N/S Not specified
- N/A Not applicable
- Amount too small to be expressed.

APPENDIX VI (cont'd)

EXPORTS OF NATURAL GAS AND PROPANE

B. PROPANE	EXPORTER	LICENCE/ORDER	TERM OF LICENCE/ORDER FROM TO	MAXIMUM ANNUAL EXPORT VOLUME (Barrels)	1972 EXPORTS (Barrels)
1.	Dome Petroleum Limited	GL-26(AO-2) (a)	1/1/72 31/12/72 1/1/73 31/12/89	2,630,500 See Appendix V	2,163,283
2.	Amoco Canada Petroleum Company Ltd.	GL-27(AO-2) (a)	1/1/72 31/12/72 1/1/73 31/10/94	1,491,000 See Appendix V	2,452,386
3.	Dome Petroleum Limited	GL-31(AO-1) (b)	1/1/72 31/12/72 1/1/73 31/12/94	839,500 See Appendix V	605,711
4.	Amoco Canada Petroleum Company Ltd.	GL-32(AO-1) (b)	1/1/72 31/12/72 1/1/73 31/10/94	584,000 See Appendix V	1,155,438
5.	TransCanada GasProducts Ltd.	GL-33(AO-1) (a)	1/1/72 31/12/72 1/1/73 31/12/86	993,500 See Appendix V	1,248,658
6.	TransCanada GasProducts Ltd.	GL-34(AO-1) (b)	1/1/72 31/12/72 1/1/73 31/12/87	401,500 See Appendix V	345,161

(a) This is an export-import licence whereby all propane exported near Gretna, Manitoba must be re-imported near Sarnia, Ontario.

(b) This licence contains a provision which allows re-importation near Sarnia, Ontario of all or part of the propane exported near Gretna, Manitoba.

* * * *

APPENDIX VII

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE ISSUED DURING 1972

A. LICENCES - NATURAL GAS IMPORT - SECTION 82

APPLICANT	LICENCE NUMBER	DATE OF ISSUE	POINT OF IMPORT	TERM		MAXIMUM IMPORT VOLUMES		
				FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (MMcf)
1. Consolidated Natural Gas Limited	GLI-5 (a)	15/3/72	N/S	15/3/72	31/10/92	150,000	45,000	669,000
(a) The quantity of gas which is imported under the authority of this licence shall be equal to the quantities of gas which the licensee exports pursuant to licence No. GL-44.								

B. LICENCES - PROPANE IMPORT - SECTION 82

None Issued

C. ORDERS AMENDING EXISTING NATURAL GAS IMPORT LICENCES - SECTION 17

None Issued

D. ORDERS AMENDING EXISTING PROPANE IMPORT LICENCES - SECTION 17

None Issued

APPENDIX VII (cont'd)

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE ISSUED DURING 1972

E. ORDERS - NATURAL GAS IMPORT - PART VI REGULATIONS - SECTION 17

APPLICANT	LICENCE NUMBER	DATE OF ISSUE	POINT OF IMPORT	TERM		MAXIMUM IMPORT VOLUMES		
				FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (MMcf)
1. Trans-Canada Pipe Lines Limited	EO-1-72 (a)	6/ 4/72	Niagara Falls, Ont.	6/ 4/72	10/ 4/72	100,000	-	N/S
2. Trans-Canada Pipe Lines Limited	EO-4-72 (b)	22/ 8/72	Niagara Falls, Ont.	22/ 8/72	22/ 8/72	40,000	-	40
3. TransCanada Pipelines Limited	EO-6-72 (c)	26/10/72	Niagara Falls, Ont.	26/10/72	31/12/72	N/S	N/S	3,000

F. ORDERS AMENDING EXISTING NATURAL GAS IMPORT ORDERS - SECTION 17

None Issued

N/S Not specified

(a) The same volume of gas imported from Tennessee Gas Pipeline Company under this licence was returned under EO-2-72 during the period 12/4/72 to 30/4/72.

(b) The same volume of gas imported from Tennessee Gas Pipeline Company under this licence was returned under AO-1-EO-5-72 during the period 22/8/72 to 30/9/72.

(c) The same quantity of gas imported pursuant to this Order shall be returned by exporting such gas to Tennessee Gas Pipeline Company during the period from the 1st day of May, 1973 to the 30th day of September, 1973.

* * * *

APPENDIX VIII

SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1972

A. NATURAL GAS

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUMES		
			FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (MMcf)
1. Union Gas Company of Canada Limited	GLI-1	Ojibway, Ont.	1/ 2/65	5/11/76	55,000	15,500	170,000
2. Border Utilities Limited	GO-2-66	Coutts, Alta.	2/ 6/66	14/ 9/85	1,000	N/S	N/S
3. Canadian Western Natural Gas Company Limited	GO-6-66(AO-1)	Coutts, Alta.	22/ 9/66	14/ 9/85	1,000	N/S	N/S
4. Trans-Canada Pipe Lines Limited	GL-21(AO-5) ^(a)	(Sault Ste. Marie, and Sarnia, Ont.)	5/11/68	31/10/91	N/S	247,782	6,000,000
5. ICG Transmission Limited	GL-30 ^(b)	Rainy River, Ont.	1/11/70	31/10/95	36,366	12,144	299,990
6. Trans-Canada Pipe Lines Limited	GL-42 ^(a)	(Sault Ste. Marie, and Sarnia, Ont.)	15/ 4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218) 92,218)	2,129,232
7. Consolidated Natural Gas Limited	GLI-5	N/S	15/ 3/72	31/10/92	150,000	45,000	669,000

(a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(b) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

N/S Not specified.

APPENDIX VIII (cont'd)

SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1972

B. PROPANE	IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUMES ANNUAL (BARRELS)
				FROM	TO	
1. Dome Petroleum Limited		GL-26(AO-2)(a)	Sarnia, Ont.	1/1/70	31/12/70	1,800,000
				1/1/71	31/12/71	2,565,500
				1/1/72	31/12/72	2,630,500
				1/1/73	31/12/73	2,830,500
				1/1/74	31/12/74	2,829,000
				1/1/75	31/12/75	2,866,500
				1/1/76	31/12/76	2,864,500
				1/1/77	31/12/77	2,830,000
				1/1/78	31/12/78	2,811,500
				1/1/79	31/12/79	2,819,500
				1/1/80	31/12/80	2,922,500
				1/1/81	31/12/81	3,108,500
				1/1/82	31/12/82	3,132,500
				1/1/83	31/12/83	2,820,000
				1/1/84	31/12/84	2,434,000
				1/1/85	31/12/85	2,139,500
				1/1/86	31/12/86	1,800,000
				1/1/87	31/12/87	775,000
				1/1/88	31/12/88	249,000
				1/1/89	31/12/89	199,000
2. Amoco Canada Petroleum Company Ltd.		GL-27(AO-2)(a)	Sarnia, Ont.	1/1/70	31/12/70	1,800,000
				1/1/71	31/12/71	1,636,000
				1/1/72	31/12/72	1,491,000
				1/1/73	31/12/73	1,466,000
				1/1/74	31/12/74	1,446,000
				1/1/75	31/12/75	1,416,000
				1/1/76	31/12/76	1,401,000
				1/1/77	31/12/77	1,366,000

APPENDIX VIII (cont'd)

SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1972

B. PROPANE	IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		ANNUAL (BARRELS)	MAXIMUM IMPORT VOLUMES
				FROM	TO		
3. Dome Petroleum Limited		GL-31(AO-1) (b)	Sarnia, Ont.	1/1/78	31/12/78	1,341,000	
				1/1/79	31/12/79	1,331,000	
				1/1/80	31/12/80	1,411,000	
				1/1/81	31/12/81	1,601,000	
				1/1/82	31/12/82	1,666,000	
				1/1/83	31/12/83	1,626,000	
				1/1/84	31/12/84	1,591,000	
				1/1/85	31/12/85	1,561,000	
				1/1/86	31/12/86	1,536,000	
				1/1/87	31/12/87	901,000	
				1/1/88	31/12/88	881,000	
				1/1/89	31/12/89	856,000	
				1/1/90	31/12/90	481,000	
				1/1/91	31/12/91	461,000	
				1/1/92	31/12/92	456,000	
				1/1/93	31/12/93	441,000	
				1/1/94	31/10/94	168,600	
				1/1/71	31/12/86	839,500	
				1/1/87	31/12/87	906,000	
				1/1/88	31/12/88	1,216,000	
				1/1/89	31/12/89	1,241,000	
				1/1/90	31/12/90	1,065,000	
				1/1/91	31/12/91	1,045,000	
				1/1/92	31/12/92	1,040,000	
				1/1/93	31/12/93	1,025,000	
				1/1/94	31/10/94	655,000	
4. Amoco Canada Petroleum Company Ltd.		GL-32(AO-1) (b)	Sarnia, Ont.	1/1/71	31/12/93	584,000	
				1/1/94	31/10/94	486,400	

APPENDIX VIII (cont'd)

SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS AND PROPANE AS AT 31 DECEMBER 1972

B. PROPANE

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUMES ANNUAL (BARRELS)
			FROM	TO	
5. TransCanada GasProducts Limited	GL-33(AO-1)(a)	Sarnia, Ont.	1/1/71	31/12/71	783,500
			1/1/72	31/12/72	993,500
			1/1/73	31/12/73	1,218,500
			1/1/74	31/12/74	1,237,000
			1/1/75	31/12/75	1,304,500
			1/1/76	31/12/76	1,317,500
			1/1/77	31/12/77	1,318,000
			1/1/78	31/12/78	1,324,500
			1/1/79	31/12/79	1,342,500
			1/1/80	31/12/80	1,365,500
			1/1/81	31/12/81	1,361,500
			1/1/82	31/12/82	1,320,500
			1/1/83	31/12/83	1,048,000
			1/1/84	31/12/84	697,000
			1/1/85	31/12/85	432,500
			1/1/86	31/12/86	118,000
6. TransCanada GasProducts Limited	GL-34(AO-1)(b)	Sarnia, Ont.	1/1/71	31/12/85	401,500
			1/1/86	31/12/86	335,000
			1/1/87	31/12/87	25,000

(a) This is an export-import licence whereby all propane exported near Gretna, Manitoba, must be re-imported near Sarnia, Ontario.

(b) This licence contains a provision which allows re-importation near Sarnia, Ontario, of all or part of the propane exported near Gretna, Manitoba.

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APPENDIX IX

IMPORTS OF NATURAL GAS AND PROPANE

APPENDIX IX												
- 75 -												
A. NATURAL GAS												
IMPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/67		(a)		
	DAILY (Mcf)	ANNUAL (MMcf)	1968	1969	1970	1971	1972	CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED IMPORTS	REMAINING UNDER LICENCES		
1. Coutts Gas Company Limited PC1955-1742	N/S	120	-	-	-	-	-	797	2,340	N/A		
2. Border Utilities Limited GO-2-66	1,000	N/S	32	36	35	36	39	237	N/S	N/A		
3. Canadian Western Natural Gas Company Limited GO-6-66(AO-1)	1,000	N/S	72	76	74	77	87	521	N/S	N/A		
4. Union Gas Company of Canada, Limited PC1956-1848	N/S	5,500	-	-	-	-	-	72,563	N/S	N/A		
5. Union Gas Company of Canada, Limited GLI-1	55,000	15,500	15,192	11,449	10,625	14,236	15,426	97,737	167,042 (b)	69,305		

APPENDIX IX (cont'd)

IMPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

IMPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)						CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED IMPORTS	REMAINING (a) UNDER LICENCES
	DAILY (Mcf)	ANNUAL (MMcf)	1967	1968	1969	1970	1971	1972			
6. Trans-Canada Pipe Lines Limited GLI-2(AO-2)											
1/11/65 to 1/11/66	N/S	25,500	(
1/11/66 to 1/11/67	N/S	30,400	(
1/11/67 to 1/11/68	N/S	15,300	(	13,499	5,054	126	-	-	77,166)	86,500	N/A
1/11/68 to 1/11/69	N/S	10,200	(
1/11/69 to 1/11/70	N/S	5,100	(
7. Tecumseh Gas Storage Limited GLI-3	20,000	3,000	5,896	-	-	-	-	-	5,896	5,896 ^(b)	-
8. Trans-Canada Pipe Lines Limited GLI-4(AO-6)	N/S	N/S	12,836	47,873	18,320	-	-	-	79,029	82,303	N/A
9. Consolidated Natural Gas Limited GLI-5(e)	150,000	45,000	-	-	-	-	-	3	3	669,000	668,997
10. Trans-Canada Pipe Lines Limited ^(c) GLI-21(AO-5)	N/S	247,782	-	19,930	157,207	231,557	223,189	220,480	852,363	6,000,000	5,147,637
11. ICG Transmission Limited, GLI-30 ^(d)	36,366	12,144	-	-	-	45	9,100	11,500	20,645	299,990	279,345

APPENDIX IX (cont'd)

APPENDIX IX (cont'd)

IMPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

APPENDIX IX (cont'd)

IMPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/67	CUMULATIVE TO 31/12/72			TOTAL AUTHORIZED IMPORTS	REMAINING UNDER LICENCES (a)
	DAILY (Mcf)	ANNUAL (MMcf)	1968	1969	1970	1971	1972						
12. Trans-Canada Pipe Lines Limited GL-42 (c) 15/4/71 to 31/10/71 1/11/71 to 31/10/94	N/S N/S	8,218 92,218	- -	- -	- -	7,310 10,601	- 82,057	( (	- -	7,310 92,658	2,129,232	2,029,264	- 77 -
13. Trans-Canada Pipe Lines Limited EO-2-62	N/S	N/S	-	-	-	-	-	2	-	2	5	N/A	N/A
14. Trans-Canada Pipe Lines Limited EO-1-63	70,000	N/S	-	-	-	-	-	199	-	199	1,000	N/A	N/A
15. Union Gas Company of Canada, Limited EO-2-63	N/S	N/S	-	-	-	-	-	55	-	55	55	-	-
16. Union Gas Company of Canada, Limited EO-3-63	N/S	N/S	-	-	-	-	-	1,083	-	1,083	1,965 (b)	N/A	N/A

APPENDIX IX (cont'd)

APPENDIX IX (cont'd)

IMPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

IMPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/67	CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED IMPORTS	REMAINING (a) UNDER LICENCES
	DAILY (Mcf)	ANNUAL (MMcf)	1968	1969	1970	1971	1972				
17. Trans-Canada Pipe Lines Limited EO-1-64	140,000	N/S	-	-	-	-	-	2,511	2,511	2,500	N/A
18. Trans-Canada Pipe Lines Limited EO-2-64(AO-1)	150,000	N/S	-	-	-	-	-	1,756	1,756	3,450	N/A
19. Union Gas Company of Canada, Limited EO-2-66(AO-1)	N/S	N/S	-	-	-	-	-	7,861	7,861	7,861 ^(b)	-
20. Union Gas Company of Canada, Limited EO-1-67	N/S	N/S	4,887	-	-	-	-	2,974	7,861	7,861 ^(b)	-
21. Trans-Canada Pipe Lines Limited EO-2-67	N/S	N/S	-	-	-	-	-	389	389	500	N/A

APPENDIX IX (cont'd)

IMPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

IMPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)						CUMULATIVE TO 31/12/72	TOTAL AUTHORIZED IMPORTS	REMAINING (a) UNDER LICENCES
	DAILY (Mcf)	ANNUAL (MMcf)	1968	1969	1970	1971	1972				
22. Westcoast Transmission Company Limited EO-4-70	N/A	N/A	-	-	1	-	-	1	N/A	-	
23. Trans-Canada Pipe Lines Limited EO-1-72	100,000	N/A	-	-	-	-	121	121	N/S	N/A	
24. Trans-Canada Pipe Lines Limited EO-4-72	40,000	N/A	-	-	-	-	20	20	40	N/A	
Gross Imports			101,485	192,142	242,463	264,549	329,733	1,328,784			
Deduct Imports for Re-Exports:			-	-	-	-	3	3			
Item 9, GLI-5(e)											
Deduct Re-import of Exports:			19,930	157,207	231,557	223,189	220,480	852,363			
Item 10, GL-21(c)			-	-	45	9,100	11,500	20,645			
Item 11, GL-30(d)			-	-	-	17,911	82,057	99,968			
Item 12, GL-42(c)			-	-	-	-	-	-			
Net Imports			81,555	34,935	10,861	14,349	15,693	355,805			

APPENDIX IX (cont'd)

IMPORTS OF NATURAL GAS AND PROPANE

A. NATURAL GAS

FOOTNOTES:

- (a) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.
- (b) Converted from "wet base" to "dry base" for purpose of comparability.
- (c) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.
- (d) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
- (e) The quantities of gas authorized for import by this licence near Loomis, Saskatchewan, are authorized to be exported at Emerson, Manitoba, pursuant to Licence GL-44.

N/S Not specified

N/A Not applicable.

APPENDIX IX (cont'd)

IMPORTS OF NATURAL GAS AND PROPANE

B. PROPANE	IMPORTER	LICENCE/ORDER	TERM OF LICENCE/ORDER		MAXIMUM ANNUAL IMPORT VOLUME (Barrels)	1972 IMPORTS (Barrels)
			FROM	TO		
1.	Dome Petroleum Limited	GL-26(AO-2) (a)	1/1/72 1/1/73	31/12/72 31/12/89	2,630,500 See Appendix VIII	2,237,786
2.	Amoco Canada Petroleum Company Ltd.	GL-27(AO-2) (a)	1/1/72 1/1/73	31/12/72 31/10/94	1,491,000 See Appendix VIII	2,504,554
3.	Dome Petroleum Limited	GL-31(AO-1) (b)	1/1/72 1/1/73	31/12/72 31/12/94	839,500 See Appendix VIII	
4.	Amoco Canada Petroleum Company Ltd.	GL-32(AO-1) (b)	1/1/72 1/1/73	31/12/72 31/10/94	584,000 See Appendix VIII	
5.	TransCanada GasProducts Ltd.	GL-33(AO-1) (a)	1/1/72 1/1/73	31/12/72 31/12/86	993,500 See Appendix VIII	1,241,503
6.	TransCanada GasProducts Ltd.	GL-34(AO-1) (b)	1/1/72 1/1/73	31/12/72 31/12/87	401,500 See Appendix VIII	

(a) This is an export-import licence whereby all propane exported near Gretna, Manitoba must be re-imported near Sarnia, Ontario.

(b) This licence contains a provision which allows re-importation near Sarnia, Ontario of all or part of the propane exported near Gretna, Manitoba.

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APPENDIX X

RECEIPTS OF CANADIAN CRUDE OIL AND EQUIVALENT IN THE UNITED STATES 1971 and 1972
(Barrels of 35 Canadian Gallons)

Districts I-IV	1971		1972	
	Total for Year	Daily Average	Total for Year	Daily Average
(a)				
Amoco Oil Company	7,686,629	21,059	10,713,959	29,273
Amoco Oil Company	788,236	2,160	2,865,408	7,829
Amoco Oil Company	673,777	1,846	915,580	2,502
Amoco Oil Company	-	-	380,346	1,039
American Petrofina Inc.	328,600	900	204,616	559
APCO Oil Corporation	568,279	1,557	624,872	1,707
Ashland Oil & Refining Co.	17,488,741	47,914	21,608,404	59,039
Ashland Oil & Refining Co.	653,501	1,791	1,298,152	3,547
Ashland Oil & Refining Co.	14,379,859	39,397	16,818,180	45,951
Atlantic Richfield Oil Co.	4,083,983	11,189	5,448,479	14,887
Atlantic Richfield Oil Co.	759,725	2,082	1,792,367	4,897
Bay Refining Company	4,430,059	12,137	4,290,950	11,724
Big West Oil Company	686,986	1,882	679,572	1,857
Cities Service Oil Co.	4,193,215	11,488	6,165,249	16,845
Clark Oil & Refining Corporation	8,557,551	23,445	19,498,427	53,274
Continental Oil Company	8,851,652	24,251	12,363,049	33,779
Continental Oil Company	1,432,039	3,923	1,548,206	4,230
Continental Oil Company	6,517,795	17,857	6,925,698	18,923
Consumers Power Company	-	-	322,604	881
CRA Inc.	403,666	1,106	526,590	1,439
Crystal Refining Company of Carson City Inc.	635,177	1,740	816,145	2,230
Derby Refining Company	157,866	433	238,691	652
Farmers Union Central Exchange Inc.	3,348,106	9,173	4,191,204	11,451
Gladioux Refining Inc.	352,970	967	454,085	1,241
Gulf Oil Corporation	7,345,767	20,125	8,621,778	23,556
Exxon Co., U.S.A. (b)	2,546,575	6,977	3,732,987	10,199
Husky Oil Company	314,204	858	371,933	1,016
Whiting, Indiana				
Mandan, N. Dakota				
Sugar Creek, Missouri				
Casper, Wyoming				
Kansas City, Kansas				
Kansas City, Kansas				
N. Tonawanda, New York				
Canton, Ohio				
St. Paul, Minnesota				
East Chicago, Indiana				
Sinclair, Wyoming				
Bay City, Michigan				
Kevin, Montana				
E. Chicago, Indiana				
Blue Island, Illinois				
Billings, Montana				
Denver, Colorado				
Wrenshall, Minnesota				
Jackson, Michigan				
Phillipsburg, Kansas				
Carson City, Michigan				
Wichita, Kansas				
Laurel, Montana				
Fort Wayne, Indiana				
Toledo, Ohio				
Billings, Montana				
Cheyenne, Wyoming				

APPENDIX X (cont'd)

RECEIPTS OF CANADIAN CRUDE OIL AND EQUIVALENT IN THE UNITED STATES 1971 AND 1972

(Barrels of 35 Canadian Gallons)

	1971		1972	
	Total for Year	Daily Average	Total for Year	Daily Average
Districts I-IV				
Koch Refining Co.			28,914,536	79,001
Lake Superior Dist. Fwr.			89,522	245
Lakehead Pipe Line Co. Inc.			207,546	567
Laketon Asphalt Refining Inc.			770,676	2,106
Little America Refining Co.			534,846	1,461
Marathon Oil Company			4,793,084	13,096
Mobil Oil Company			13,915,355	38,020
Mobil Oil Company			855,554	2,338
Mobil Oil Company				
Murphy Oil Corporation			2,426,817	6,631
NCRA			11,759,575	32,130
Osceola Refining Company			438,355	1,198
Phillips Petroleum Co.			1,588,259	4,340
Refinery Corp.			1,165,681	3,185
Rock Island Oil Co.			140,044	384
Shell Oil Company			235,447	643
Skelly Oil Company			2,611,775	7,136
Standard Oil Company (Ohio)			627,858	1,715
Standard Oil Company (Ohio)			18,183,379	49,681
Sun Oil Company			632,664	1,729
Texaco Incorporated			8,818,509	24,094
Texaco Incorporated			4,110,264	11,230
Texaco Incorporated			167,520	458
Total (Leonard) Refineries, Inc.			695,778	1,901
Union Oil Company of California			7,136,844	19,499
United Refining Company			2,905,278	7,938
Westco Refining Company			5,004,053	13,672
Witco Chemical Corporation			92,547	253
Others				
			234,134	640
Total Districts I-IV	196,690,626	538,878	252,473,431	689,818

APPENDIX X (cont'd)

RECEIPTS OF CANADIAN CRUDE OIL AND EQUIVALENT IN THE UNITED STATES 1971 AND 1972

(Barrels of 35 Canadian Gallons)

	1971		1972	
	Total for Year	Daily Average	Total for Year	Daily Average
District V				
Atlantic Richfield Oil Company			27,358,751	74,751
Douglas Oil Company of California	2,044,967	5,603	125,202	342
Exxon Co. U.S.A. (b)	2,416,472	6,620	-	-
Mobil Oil Company	252,511	692	20,490,957	55,986
Phillips Petroleum Company	19,166,420	52,511	-	-
Shell Oil Company	242,875	665	27,982,830	76,456
Standard Oil Company of California	29,043,557	79,571	-	-
Texaco Incorporated	1,180,121	3,233	-	-
	630,534	1,728	21,769,453	59,479
	21,680,705	59,399	97,727,193	267,014
Total District V	76,658,162	210,022	350,200,624	956,832
Total U.S.A.	273,348,788	748,900		

(a) Formerly American Oil Company

(b) Formerly Humble Oil & Refining Company

Source: Company reports to the National Energy Board

APPENDIX X (cont'd)

RECEIPTS OF CANADIAN CRUDE OIL AND EQUIVALENT IN THE UNITED STATES 1971 AND 1972

(Barrels of 35 Canadian Gallons)

NOTE: Export data corresponding to the foregoing receipts are:

	<u>1971</u>	<u>1972</u>
Districts I-IV	197,110,192 bbls (540,028 b/d)	250,633,294 bbls (684,790 b/d)
District V	76,658,162 bbls (210,022 b/d)	97,552,844 bbls (266,538 b/d)
Total	273,768,354 bbls (750,050 b/d)	348,186,138 bbls (951,328 b/d)

* * *

APPENDIX XI

IMPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS 1971 AND 1972 (a)

(Barrels of 35 Canadian gallons per day)

		ATLANTIC PROVINCES	QUEBEC & E. ONTARIO	CENTRAL & W. ONTARIO	PRAIRIES	B. C.	YUKON & N.W. TERRITORIES	TOTAL
Crude Oil	1972	265,533	522,253	1,160	-	-	-	788,946
	1971	200,862	466,018	896	-	-	-	667,776
Motor Gasoline	1972	6	8,032	2	46	-	-	8,086
	1971	597	10,544	1	32	-	33	11,207
Middle Distillates	1972	13,541	19,175	4,335	682	2,660	-	40,393
	1971	16,497	19,089	2,601	404	2,359	238	41,188
Heavy Fuels	1972	9,887	45,307	6,306	-	8,479	13	69,992
	1971	21,322	49,608	2,731	-	7,269	12	80,941
Other Products	1972	2,712	9,087	8,283	220	1,501	43	21,847
	1971	2,589	7,492	5,857	203	989	194	17,323
Total Products	1972	26,146	81,601	18,927	948	12,640	56	140,318
	1971	41,004	86,732	11,190	638	10,617	477	150,659
Crude Oil & Products	1972	291,679	603,854	20,087	948	12,640	56	929,264
	1971	241,866	552,750	12,086	638	10,617	477	818,435

(a) 1971 revised; 1972 subject to revision.

Source: Company import and transfer reports

* * * *

APPENDIX XII

IMPORTS AND NET TRANSFERS (a) OF PETROLEUM PRODUCTS INTO CENTRAL AND WESTERN ONTARIO 1966 - 1972 (Barrels of 35 Canadian gallons per day)

	MOTOR GASOLINE	MIDDLE DISTILLATES	TOTAL LIGHT OILS	RESIDUAL FUEL OIL	OTHER PRODUCTS	TOTAL RESID. & OTHER PROD.	TOTAL ALL PRODUCTS
1966	3,891	16,295	20,186	16,964	9,199	26,163	46,349
1967	5,276	19,018	24,294	14,726	13,955	28,681	52,975
1968	6,684	24,249	30,933	15,074	14,783	29,857	60,790
1969	8,247	19,708	27,955	17,666	16,626	34,292	62,247
1970	9,495	18,357	27,852	22,922	16,389	39,311	67,163
1971	5,623	12,479	18,102	21,407	9,637	31,044	49,146
1972 ^(b)	8,034	14,852	22,886	25,893	16,176	42,069	64,955

(a) Reported as transfers from Quebec and Maritime Provinces to central and western Ontario.

(b) Subject to revision.

Source: Company reports to the National Energy Board

* * * *

APPENDIX XIII

PIPELINE LEAKS, BREAKS AND MALFUNCTIONS

The following is a summary of leaks, breaks, malfunctions and other pipeline incidents reported to the Board during 1972 by companies under the jurisdiction of the National Energy Board:

<u>Origin of Reported Incidents</u>	<u>Number of Incidents</u>
Internal and external corrosion of pipe and equipment	21
Defective Mill Welds	7
Defective Field Welds	3
Pipe Material Defects	2
Defective Equipment and Piping	2
Damage by Construction of others	2
Miscellaneous	7
	<hr/>
TOTAL	44
	<hr/> <hr/>

APPENDIX XIV

NEW LICENCES AND ORDERS TO EXPORT ELECTRIC POWER AND ENERGY DURING 1972

A. NEW LICENCES ISSUED IN 1972 PURSUANT TO SECTION 82

APPLICANT	CLASS	KILOWATTS	ANNUAL KILOWATTHOURS (MILLIONS)	TERM	APPLICATION HEARD	ISSUED	LICENCE NUMBER
1. The Ontario-Minnesota Pulp and Paper Company Limited	Firm	35,000	306.6	11/ 7/72 to 31/12/80	15/2/72	29/5/72	EL-62
2. The Ontario-Minnesota Pulp and Paper Company Limited	Inter- ruptible	-	87.6	11/ 7/72 to 31/12/80	15/2/72	29/5/72	EL-63
3. The New Brunswick Electric Power Commission	Firm	400,000	3,504	1/ 1/76 to 31/10/86	18/4/72	19/7/72	EL-64
4. The New Brunswick Electric Power Commission	Inter- ruptible	-	876	1/ 1/76 to 31/10/86	18/4/72	19/7/72	EL-65
5. The New Brunswick Electric Power Commission	Firm	25,000	219	1/ 1/76 to 31/10/86	18/4/72	19/7/72	EL-66
6. The New Brunswick Electric Power Commission	Firm	60,000	473	1/ 1/73 to 31/10/76	15/8/72	28/9/72	EL-67
7. The New Brunswick Electric Power Commission	Inter- ruptible	-	150	1/ 1/73 to 31/10/76	15/8/72	28/9/72	EL-68

APPENDIX XIV (cont'd)

NEW LICENCES AND ORDERS TO EXPORT ELECTRIC POWER AND ENERGY DURING 1972

A. NEW LICENCES ISSUED IN 1972 PURSUANT TO SECTION 82 (cont'd)

APPLICANT	CLASS	KILOWATTS	ANNUAL KILOWATTHOURS (MILLIONS)	TERM	APPLICATION HEARD	ISSUED	LICENCE NUMBER
8. The New Brunswick Electric Power Commission	Firm	13,000	102	1/ 1/73 to 31/10/76	15/8/72	28/9/72	EL-69
9. The New Brunswick Electric Power Commission	Inter- ruptible	-	164	1/ 1/73 to 31/10/76	15/8/72	28/9/72	EL-70
10. The New Brunswick Electric Power Commission	Firm	40,000	100	1/ 1/73 to 31/10/76	15/8/72	28/9/72	EL-71
11. The New Brunswick Electric Power Commission	Firm	15,000	131	1/ 1/73 to 31/10/76	15/8/72	28/9/72	EL-72

B. NEW ORDERS ISSUED IN 1972 PURSUANT TO SECTION 6A OF THE REGULATIONS UNDER PART VI OF THE ACT*

APPLICANT	CLASS	KILOWATTS	ANNUAL KILOWATTHOURS (THOUSANDS)	TERM FROM DATE OF ISSUE-MONTHS	ISSUED	ORDER NUMBER
1. West Kootenay Power and Light Company Limited	Firm	20	50	36	24/8/72	ELO-95
2. The Hydro-Electric Power Commission of Ontario	Firm	25	10	36	7/12/72	ELO-96

* Under Section 6A the Board may by order authorize the exportation of not more than 4,000 kilowatts of electrical power and not more than 20,000,000 kilowatthours per year of electrical energy for a term not exceeding three years upon such terms and conditions as the Board may prescribe.

APPENDIX XIV (cont'd)

NEW LICENCES AND ORDERS TO EXPORT ELECTRIC POWER AND ENERGY DURING 1972

C. AMENDING ORDERS ISSUED IN 1972 RELATIVE TO ELECTRIC POWER EXPORT LICENCES

APPLICANT	ASSOCIATED LICENCE	ISSUED	ORDER NUMBER
1. Cominco Limited	EL-45	5/ 5/72	AO-1-EL-45
2. Cedars Rapids Transmission Company Limited	EL-44	25/ 5/72	AO-2-EL-44
3. The Ontario Minnesota Pulp and Paper Company Limited	EL-28	15/ 5/72	AO-5-EL-28
4. Cedars Rapids Transmission Company Limited	EL-44	21/11/72	AO-3-EL-44
5. Southern Canada Power Company Limited	EL-30	7/12/72	AO-4-EL-30
6. Southern Canada Power Company Limited	EL-31	7/12/72	AO-4-EL-31
7. The New Brunswick Electric Power Commission	EL-66	7/12/72	AO-1-EL-66

D. AMENDING ORDER ISSUED IN 1972 RELATIVE TO ELECTRIC POWER EXPORT ORDERS

APPLICANT	ASSOCIATED ORDER	ISSUED	ORDER NUMBER
1. Hydro-Quebec	ELO-84	13/ 1/72	AO-1-ELO-84

* * * *

APPENDIX XV

EXPORTS OF ELECTRIC ENERGY - CALENDAR YEAR 1972

EXPORTER	LICENCE NUMBER	THOUSANDS OF KILOWATTHOURS				REPORTED DOLLAR VALUE OF EXPORT	
		LICENCE AUTHORIZATION		GROSS ENERGY EXPORTED		FIRM	INTERRUPTIBLE
		FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE		
						\$	\$
1. Maine and New Brunswick Electrical Power Company Limited	EL-22 EL-23	250,000	25,000	133,752	1,224	1,062,148	612
2. Fraser Companies, Limited	EL-60 EL-61	300,000	30,000	275,332	-	2,615,654	-
3. The New Brunswick Electric Power Commission	EL-39 EL-40 EL-41 EL-42 EL-43 EL-51 EL-52 EL-53 ELO-88-90	225,000 76,180 100,000 1,000,000 477,000 225	150,000 116,000 2,500,000	169,315 27,576 81,895 892,820 - 162	17,221 1,608 283,929	1,343,928 239,471 (a) 6,431,280 - 5,551	128,528 13,298 2,678,434
SUB TOTAL NEW BRUNSWICK				1,580,852	303,982	11,698,032	2,820,872
4. Cedars Rapids Transmission Company Limited	AO-3-EL-44		500,000		280,252		1,306,387
5. Quebec Hydro-Electric Commission	EL-80 to 86 & 91	566		301		4,192	
6. Southern Canada Power Company Limited	AO-4-EL-30 AO-4-EL-31	13,000	74,250	12,383	72,151	137,053	388,663
SUB TOTAL QUEBEC				12,684	352,403	141,245	1,695,050

APPENDIX XV

APPENDIX XV (cont'd)

EXPORTS OF ELECTRIC ENERGY - CALENDAR YEAR 1972

THOUSANDS OF KILOWATTHOURS

EXPORTER	LICENCE NUMBER	LICENCE AUTHORIZATION		GROSS ENERGY EXPORTED		REPORTED DOLLAR VALUE OF EXPORT	
		FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE
7. The Hydro-Electric Power Commission of Ontario.	EL-32 EL-33 EL-34	15,000	6,500,000 105,000	969	5,252,594 -	\$ 1,939	\$ 42,161,699
8. Canadian Niagara Power Company Limited	EL-58 EL-59	307,000	160,000	293,167	116,150	1,829,464	545,906
9. The Ontario-Minnesota Pulp and Paper Company Limited	EL-28 & EL-62 EL-63	179,600	87,600	131,464	-	1,122,165	-
10. The Detroit and Windsor Subway Company	ELO-93	1,000		841		-	-
11. The Canadian Transit Company	ELO-87	25		24		-	-
<u>SUB TOTAL ONTARIO</u>				426,465	5,368,744	2,953,568	42,707,605
12. Manitoba-Hydro	EL-55 EL-56 EL-57 ELO-94	350,000 15	100,000 800,000	203,247 4	57,658 584,989	1,653,754 133	113,442 3,307,817
<u>SUB TOTAL MANITOBA</u>				203,251	642,647	1,653,887	3,421,259

APPENDIX XV (cont'd)

EXPORTS OF ELECTRIC ENERGY - CALENDAR YEAR 1972

EXPORTER	LICENCE NUMBER	THOUSANDS OF KILOWATTHOURS				REPORTED DOLLAR VALUE OF EXPORT	
		LICENCE AUTHORIZATION		GROSS ENERGY EXPORTED		FIRM	INTERRUPTIBLE
		FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE		
13. British Columbia Hydro and Power Authority	EL-46	10,000		7,504		97,719	
	EL-47	1,000,000		186,951		(a)	
	EL-48		1,200,000	-			220,000
	EL-49		1,554,000	-			-
	EL-50		4,000,000	737,839			1,651,373
	ELO-92	600		160		12,520	
14. Cominco Limited	AO-1-EL-20		500,000		75		
	AO-1-EL-45		1,500,000		555,196		1,035,307
15. West Kootenay Power and Light Company Limited	ELO-79	50		36		682	
				194,651		110,921	2,906,680
SUB TOTAL BRITISH COLUMBIA				2,417,903		16,557,653	53,551,466
TOTAL CANADA							

(a) No dollar value. Carrier transfer energy wheeled through U.S.A., back to Canada.

* * * *

APPENDIX XV (cont'd)

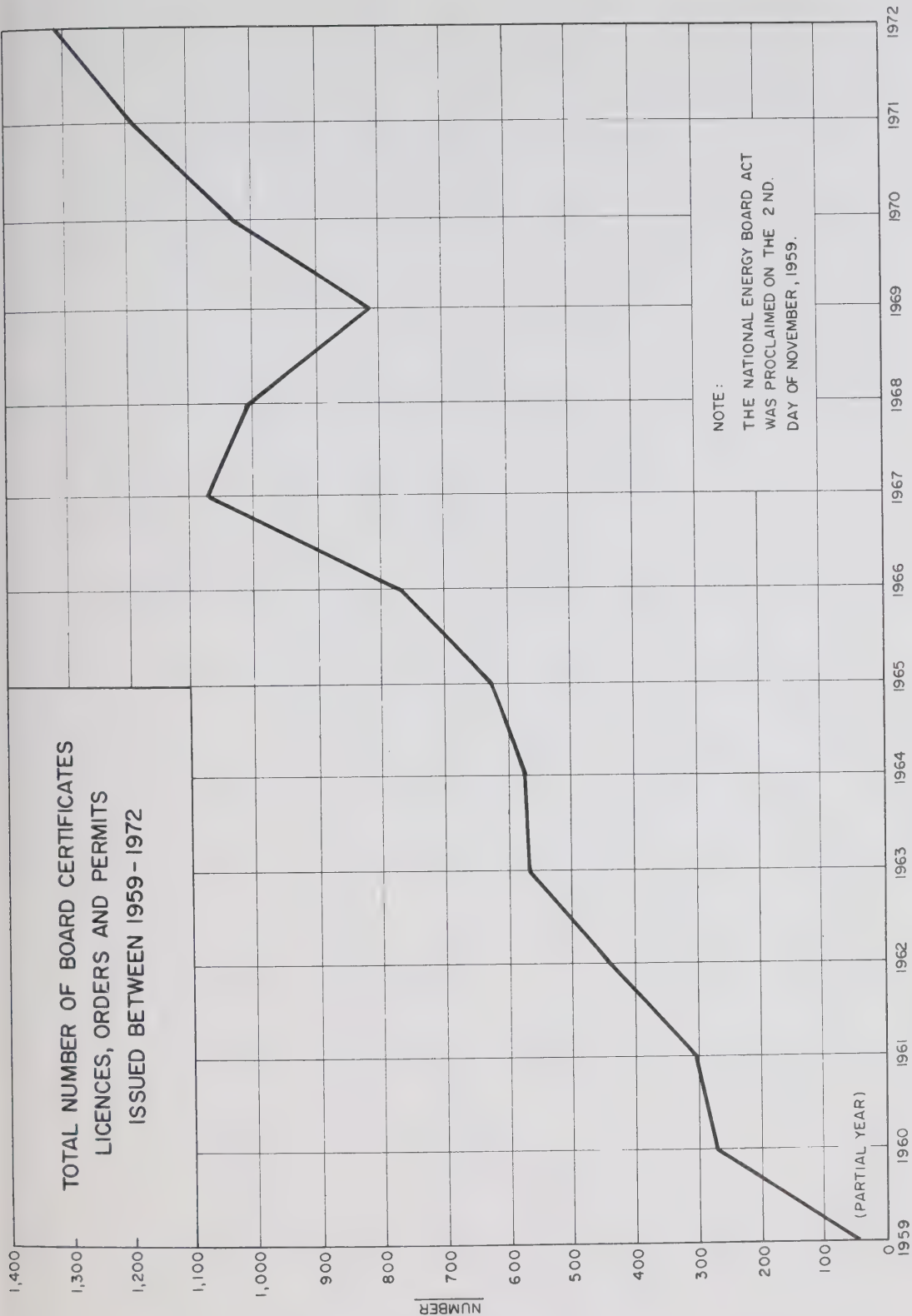
APPENDIX XVI

TOTAL CANADIAN ELECTRIC ENERGY SUPPLY AND TRADE WITH THE UNITED STATES - CALENDAR YEAR 1972

(MILLIONS OF KILOWATTHOURS)

Electric Energy Generation for all Canada	-	238,568 (preliminary)
Electric Energy Importation from U.S.A.	-	2,441 "
Total Canadian Electric Energy Supply	-	241,009 "
Electric Energy Export (Gross) to U.S.A.	-	2,418 (firm) - 1.0% Canadian Supply
		7,961 (interruptible) - 3.3% of Canadian Supply.

* * * *





NEB



Government
Publication



1973 Annual Report
National Energy Board



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NATIONAL ENERGY BOARD ANNUAL REPORT

**FOR THE YEAR ENDING
31 DECEMBER 1973**



NATIONAL ENERGY BOARD
OTTAWA, ONTARIO
K1A 0E5



OFFICE NATIONAL DE L'ÉNERGIE
OTTAWA, ONTARIO
K1A 0E5

File No. 7-2-15

29 March 1974

The Honourable Donald S. Macdonald, P.C.,
Minister of Energy, Mines and Resources,
O T T A W A.

Dear Sir:

In accordance with the provisions of Section 91
of the National Energy Board Act, the Revised Statutes of
Canada, 1970, chapter N-6, I have the pleasure to submit
the Annual Report of the Board for the year ended 31
December 1973.

Yours faithfully,

A handwritten signature in cursive script, appearing to read "Marshall A. Crowe".

Marshall A. Crowe,
Chairman.

NATIONAL ENERGY BOARD

R.D. Howland	- Chairman - January 1 to July 3
M.A. Crowe	- Chairman - October 15 to December 31
D.M. Fraser	- Vice-Chairman
N.J. Stewart	- Associate Vice-Chairman
J.G. Stabback	- Member
A. Cossette Trudel	- Member
C.G. Edge	- Member
R.F. Brooks	- Member
Robert A. Stead	- Secretary

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INTRODUCTION

This Annual Report marks the fifteenth anniversary of the National Energy Board which was established by the Parliament of Canada by the enactment of the National Energy Board Act in 1959. This report deals with the work and concerns of the Board during 1973, a year in which energy matters became increasingly important to Canadians both on the domestic and the international scene.

It was a year of increased activity for the Board and its staff. In February, 1973, by amendments to the regulations under Part VI of the Act, controls were placed on the export of crude oil and equivalent hydrocarbons effective 1 March. Controls were placed on the export of motor gasoline and middle distillates on 15 June, 1973. In the early Fall of the year, the Part VI Regulations were again amended to provide for control over the exportation of propane and butanes and heavy fuel oils as of 15 October, 1973.

There were changes in the organization of the Board. To meet the growing concern for environmental issues an Environmental Division was established and staffed to advise the Board on this aspect of matters within the Board's responsibilities. During the year, Dr. Robert D. Howland, originally appointed Vice-Chairman

at the inception of the Board, retired after five years as Chairman, and on 15 October, 1973, Mr. Marshall A. Crowe was appointed as Chairman. Mr. Ralph F. Brooks, a member of the Board's staff, was also appointed a member of the Board to fill an existing vacancy. The Board's staff increased progressively, to meet the added responsibilities and workload, from a strength of 207 at the end of 1972 to 280 at 31 December, 1973.

The authority for the work of the Board, which is regulatory and advisory, is the National Energy Board Act. The regulatory functions fall into those of a quasi-judicial nature and those of an administrative character. The quasi-judicial functions pertain to the granting of certificates of public convenience and necessity authorizing the construction of interprovincial and international pipelines and international power lines; the issuance of licences to authorize the export of gas, power or oil or the import of gas; and the regulation of traffic, tolls and tariffs of those pipelines under the jurisdiction of the Board. The regulatory functions of an administrative character include the issuance of safety orders for pipelines; the authorizing of "Leave to Open", which permits a pipeline to be put into operation; the approval of pipeline utility crossings; and the regulation of pipeline accounting practices and procedures.

The advisory functions include a requirement to study, report and recommend to the Minister such measures within the jurisdiction of the Parliament of Canada as the Board considers necessary or advisable in the public interest for the control, supervision, conservation, use, marketing and development of energy and sources of energy. The Minister may also require the Board to prepare energy studies and reports. The Board may make arrangements to cooperate with governmental or other agencies in or outside Canada in respect of energy matters.

To meet its responsibilities the Board has been staffed, since its inception, by persons having professional training and experience in industry or government or both. During 1973, the Board's organization included eight branches: Administration, Economics, Electrical Engineering, Engineering, Financial, Law, Oil Policy, and Operations Research. The budget appropriation for the 1973-74 fiscal year totalled \$5,055,352 of which \$4,235,957 was for salaries and \$819,395 was for all other expenses.

EXPLORATION AND DEVELOPMENT - OIL AND GAS

The pace of exploration in the frontier areas remained at about the same level as in 1972 except in the Arctic Islands where some acceleration was noted. In the conventional producing areas of the Western provinces, activity overall did not differ materially from 1972, although in certain parts of Alberta and Saskatchewan a considerable increase in drilling was recorded.

The more significant developments during 1973 are commented on in the following pages and are identified on the map at the end of this section.

In the Scotian Shelf-Grand Banks area of the East Coast, offset drilling to the Sable Island discovery was suspended near the end of the year after two oil and gas wells and one dry hole had been drilled. A new oil discovery, Cohasset, 25 miles southwest of Sable Island, will undoubtedly stimulate further activity in this sector (No. 1 on the map). The Grand Banks area yielded little encouragement except a non-commercial oil find, 220 miles east of St. John's. Two rigs were active in this area at year's end (No. 2).

Two unsuccessful offshore ventures were drilled in the Gulf of St. Lawrence between the Gaspé Peninsula and Cape Breton Island (No. 3). A third offshore well

drilled on the Labrador Shelf encountered hydrocarbon shows but was suspended due to weather conditions. Further evaluation will take place in the 1974 operating season (No. 4).

Exploratory activity onshore in eastern Canada was at a low level with dry holes drilled in Newfoundland, Nova Scotia, New Brunswick, and Quebec (No. 5). In Ontario, activity was largely confined to the known Silurian productive areas, with the emphasis on development drilling (No. 6).

In Manitoba there was exploratory activity northeast of the productive trends but no successes were recorded (No. 7).

In Saskatchewan, the bulk of exploration and development drilling was confined to the western part of the Province in the shallow gas and heavy oil areas (No. 8).

Alberta still ranked first in exploratory activity with an increase of over 50 per cent from 1972 in the number of wells drilled. Accelerated drilling for the shallow gas prospects in southern and east central Alberta accounted for the bulk of the activity adding modestly to overall reserves. Continued exploration in the deeper parts of the Alberta basin and in the foot-

hills region resulted in potentially significant discoveries at Quirk Creek (No. 9), Robb (No. 10), and Erith (No. 11). No major oil finds were reported in Alberta during the year.

Drilling in British Columbia slackened in 1973. The most active area was the Grizzly Valley where several deep test encountered Triassic gas, making this one of the more attractive exploratory regions (No. 12). Numerous follow-up wells to established gas areas were drilled in the Fort St. John region. Foothills drilling northwest of the Grizzly Valley sector provided little encouragement and several wildcats were abandoned. Activity in the Fort Nelson area was restricted to widely scattered wildcats and follow-ups to known Devonian gas trends. The discovery of shallow gas in the Mississippian Mattson Sand, 60 miles northwest of Fort Nelson in the Windflower area, should stimulate activity in this part of the Province (No. 13).

The southern part of the Northwest Territories had one gas discovery in the Tathlina Arch area. Widely scattered wildcats were abandoned from west of Great Slave Lake to south of Aklavik. A steady level of activity was maintained in the Mackenzie Delta area. An oil discovery was reported at Kugpik (No. 14), 36 miles

south of the Taglu gas field.

In the Arctic Archipelago a high level of drilling continued, with gas discoveries at Wallis on King Christian Island (No. 15), and at Hecla on Melville Island (No. 16). Exploitation drilling at Drake Point and Hecla was maintained at a steady pace.

Total expenditures for exploration and production, both capital and operating, were \$2.1 billion in 1973 as compared to \$1.85 billion in 1972 and \$1.70 billion in 1971. The value of Canadian production of oil, gas and natural gas liquids in each of these years was \$3.07 billion, \$2.17 billion and \$1.89 billion respectively.

OIL AND GAS DEVELOPMENTS 1973



LEGEND

- 1 SABLE ISLAND (OFFSET DRILLING) & COHASSET (OIL DISCOVERY)
- 2 GRAND BANKS (OIL RECOVERY)
- 3 GULF OF ST. LAWRENCE (2 DRY HOLES)
- 4 LABRADOR SHELF (HYDROCARBON SHOWS)
- 5 NEWFOUNDLAND, NOVA SCOTIA & QUEBEC (DRY HOLES)
- 6 ONTARIO (DEVELOPMENT)
- 7 MANITOBA (EXPLORATORY DRILLING)
- 8 SASKATCHEWAN (DEVELOPMENT)
- 9 QUIRK CREEK (MISSISSIPPIAN GAS DISCOVERY)
- 10 ROBB (MISSISSIPPIAN GAS DISCOVERY)
- 11 ERITH (DEVONIAN REEF GAS DISCOVERY)
- 12 GRIZZLY VALLEY (TRIASSIC GAS)
- 13 WINDFLOWER (MISSISSIPPIAN GAS DISCOVERY)
- 14 KUGPIK (OIL DISCOVERY)
- 15 WALLIS (GAS DISCOVERY)
- 16 HECLA (GAS DISCOVERY)

PIPELINES

Significant construction of oil and gas pipeline facilities was undertaken during 1973 by Interprovincial Pipe Line Limited, Dome NGL Pipeline Ltd., Trans Mountain Pipe Line Company Ltd., Westcoast Transmission Company Limited and TransCanada PipeLines Limited.

Interprovincial's construction program included the installation of approximately 142 miles of 48-inch diameter pipe, 28 miles of 20-inch diameter pipe, 40,000 horsepower in pumping facilities and the addition of 1,060,000 barrels of storage capacity to its pipeline system.

To complement this construction, Lakehead Pipe Line Co. Inc., a wholly owned subsidiary of Interprovincial, constructed approximately 83 miles of 48-inch diameter pipe and added 23 pumping units to the United States portion of the Interprovincial/Lakehead pipeline system to handle the increased flow of liquid hydrocarbons into both the United States and Ontario.

Dome NGL's program consisted of constructing a pipeline and associated pumping facilities to transport natural gas liquids from Sarnia to Windsor, Ontario.

Trans Mountain installed pumping facilities, approved in 1972, necessary to increase its capacity to transport crude oil from Alberta to the Pacific Northwest area of the United States.

Cochin Pipe Lines Ltd., The Imperial Pipe Line Company, Limited, Trans-Northern Pipe Line Company and Wascana Pipe Line Ltd., were other companies making additions to their pipeline systems in 1973 to facilitate the transportation of liquid hydrocarbons.

In addition to this new construction, Interprovincial Trans Mountain, Trans-Northern and Yukon Pipelines Limited, have undertaken programs to upgrade portions of their existing systems in an effort to increase their ability to meet the greater market demand for liquid hydrocarbons. A 50-mile long pipeline of Trans-Northern's system was reactivated between Kingston and Maitland, in Ontario, to enable products to be delivered to the Ottawa Valley from refineries located in the Toronto area, as well as from the traditional Montreal sources.

As mentioned in the Board's 1972 Annual Report, TransCanada was issued a certificate to build approximately 957 miles of new gas transmission line loops during 1972 and 1973.

The 1973 portion of the program consisted of 148.9 miles of 42-inch diameter pipe in the provinces of Saskatchewan and Manitoba, 347.9 miles of 36-inch diameter pipe in the provinces of Manitoba and Ontario, and 37.2 miles of 24-inch diameter pipe in Eastern Ontario, as well as additional compression facilities (63,500 horsepower) along the pipeline system.

In late 1973, TransCanada was granted a certificate to construct 242.8 miles of new gas transmission line loops in Ontario, mainly to increase the reliability of the pipeline.

Westcoast increased the mileage of its mainline gas transmission system during the year by constructing 85 miles of 36-inch diameter pipe along its pipeline system, between Fort Nelson and Huntingdon, B.C. All new Westcoast facilities were required to meet increased demands for natural gas in British Columbia.

The safety aspects of design, construction, operation and maintenance of pipelines are of continuing concern to the Board. Failures and malfunctions were, as required, immediately reported by the companies and a number of investigations were carried out in order to determine the cause of failure and to enable steps to be taken to prevent recurrence of similar failures in the

future. Board engineers inspected sites of leaks and witnessed pressure tests of pipeline facilities in conjunction with this program. A summary list of incidents which occurred in 1973 is presented in Appendix XII.

When it is deemed necessary to do so the Board retains a representative in the field during pipeline construction operations to ensure that particular care is taken to prevent interference with agricultural drainage.

Regulations for oil and gas pipelines now have reached the final draft stage. These regulations, which are expected to form the basis of safety requirements for pipelines in Canada, including those which may be constructed in the Canadian North, should be put into effect in 1974.

In connection with its oil export licensing responsibilities, the Board has conducted studies on the capacities of various oil pipelines that have destinations in the United States. The adequacy of pipeline capacity to meet the requirements of Canadian markets is continuously monitored.

The Board continued its active liaison with industry and with other government agencies and the Board's staff continued its participation in the Canadian Standards Association committees on the codes for Oil and Gas Pipeline Transportation Systems and Safety in Handling Liquefied

Natural Gas.

Environmental matters are of concern to the Board from the viewpoint of the safety and integrity of pipeline and power line facilities and from the broad viewpoint of the public interest. In 1973, work began on proposed amendments to the National Energy Board Rules of Practice and Procedure and Part VI Regulations to incorporate environmental requirements not already covered. Representatives of the Board participated in interdepartmental and international committees, technical conferences, symposia, and other meetings dealing with environmental matters of national and international significance.

In 1973 the Board issues a total of 2,485 certificates, licences, orders and permits. These included six certificates of public convenience and necessity; 1,086 licences and orders for the export of gas, oil, refined hydrocarbons and power; 23 orders exempting certain pipeline facilities from certain requirements of the Act; 40 orders approving plans, profiles and books of reference for new pipelines or portions thereof, as well as deviations of existing pipelines; one permit allowing the correction of a registered plan, profile and book of reference; 51 orders approving plans for compressor, pump and meter stations; 150 orders granting "leave to open" oil or

gas pipeline facilities; three orders authorizing the operation of existing pipeline facilities at operating pressures higher than those previously permitted; 13 orders approving the sale or conveyance of parts of pipelines; and 825 orders relating to the crossing of and by pipelines with regard to other utilities, highways and railways.

Also issued was the "Pipeline Overhead Crossing Order", which will enable utility companies to make crossings of pipelines in certain specified instances without prior referral to the Board. This should reduce the possibility of delays in construction scheduling of these facilities.

Generally speaking, these certificates, licences, orders and permits relate to the protection of the public and of pipeline facilities and to safety in pipeline operation, as well as the control of the export of gas, oil, refined hydrocarbons and power.

There was an increase of approximately 70 per cent in the total number of orders issued in 1973 over the previous year and, as in past years, the complexity and variety of the applications considered by the Board continued to increase. The annual totals of certificates, licences, orders and permits which the Board has issued since its inception are set out in Appendix XXIII.

The capital expenditures relating to the 1973 construction of pipelines and power transmission facilities under the Board's jurisdiction are summarized in Appendices I and III.

OIL AND GAS - PRODUCTION, TRANSPORTATION AND MARKETS

Oil

By early 1970, a changed oil supply-demand situation in the United States together with a widening differential between Canadian and United States crude oil prices resulted in a flow of exports well in excess of those envisage under the then current arrangements with the United States to restrict the volume of Canadian oil exports going to the critical market east of the Rockies. These shipments were therefore placed under mandatory control by the United States government in March 1970 after exports had greatly increased in successive months. Nevertheless, the underlying strength of United States demand for Canadian oil was so great that there was, later, some relaxation of this control and 1970 recorded the largest-ever annual increase in the Canadian export volume.

By early 1973, levels of export demand for Canadian oil began to strain the capacity of oil production and transportation systems and to threaten the continuity of supply of Canadian oil to domestic refiners dependent on it. In early February 1973, when no other means could

ensure intake requirements at Ontario refineries during the following month, the Board recommended that controls be introduced on the export of crude oil and equivalent hydrocarbons.

These controls became effective on 1 March under amendments to the regulations under Part VI of the National Energy Board Act. Essentially, this legislative change made the export of crude oil and condensate subject to the issue of licences by the Board, a process for which the statute defines rigid basic requirements. A licence may be issued only when the Board is satisfied (a) that the quantity of the export does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada and (b) that the price to be charged for the export is just and reasonable in relation to the public interest.

The first of these conditions bears directly upon a question that had already concerned the Board as to the longer-term level of exports warranted by accessible resources. Accordingly, at the time of the introduction of these export controls it was announced that the Board had decided to hold public hearings on oil export policy.

The impact of the second of these conditions, the adequacy of export prices, was dramatically illustrated following the decision of the federal government in September to seek a freeze on the prices of oil of domestic origin. In the light of prices prevailing in export markets, the Board was unable to find that proposed export prices equated to domestic prices were just and reasonable. The initial applications covering exports to be made in October were therefor refused, but the Board later approved revised applications at prices 40 cents a barrel higher. The government then decided to introduce legislation under which the proceeds of export sales of crude oil and condensate would be subject to an export tax corresponding to the difference between the domestic price and the export price. The measure became the Export Tax Act approved by Parliament in January 1974.

Early in 1973 it began to be clear that supply and price conditions overseas for our customary imports of refined products could cause difficulties in meeting Canadian needs. In the past, in circumstances of easy supply and buyers' markets, it was economic and logical to import finished products for open-navigation shipment

to eastern and St. Lawrence ports. This meant that the delivered costs of imported heating oil and heavy fuel oil tended to set the maximum levels at which similar oil of domestic origin could be sold. Importation was profitable, but posed a latent threat to the basic objective of the National Oil Policy, to keep the Canadian market west of the Ottawa valley substantially for western Canadian oil, and discouraged construction of additional refining capacity in Ontario.

Sharp increases in the cost of distillate and residual fuels and of freight meant that in 1973 imports could no longer be sold profitably at prevailing market prices at home. Accordingly in July the Board sought the co-operation of refiners to maximize the output of domestic heating oil in central and eastern Canada against the possibility of winter shortfalls. Some shifts in product supply were already in prospect and a number of unusual expedients designed to increase the availability of distillate fuels were adopted.

At the same time, however, the enhanced returns available from exports to United States markets threatened to drain domestic supplies, particularly of motor gasoline

and, to a lesser extent, of heating oil. While refiners might be willing to restrain new business, existing commitments made under different circumstances could prove embarrassing; moreover, restraint of export sales by refiners would not preclude export sales by jobbers and resellers purchasing in Canada. Faced with rapidly rising demand from United States buyers, the Board recommended the extension of export controls to motor gasoline and middle distillates (diesel fuel, kerosene and heating oil). These controls became effective 15 June, 1973.

Although it was then likely that similar controls might become necessary in the case of heavy fuel oil, the Board adhered to its preference to see regulation imposed only when necessary. Close monitoring of the developing situation, however, gave grounds for increasing concern over the adequacy of supply so that the Board recommended in September the extension of controls to the export of heavy fuel oil.

Meantime, there had been some concern also over the accelerating demand for Canadian propane and butanes in United States markets. It appeared that if export sales were not restrained there could be a substantial domestic

shortage of these products by the first quarter of 1974. Therefore the Board proposed the extension of controls to propane and butanes. The Governor in Council approved relevant amendments to the National Energy Board Part VI Regulations with effect from 15 October covering these products as well as heavy fuel oil.

On the heels of these developments came the renewed outbreak of hostilities in the Middle East. This was accompanied by the imposition of cutbacks in crude oil production in Arab States and the introduction of embargoes on the shipment of Arab oil. To meet these developments, the Minister of Energy, Mines and Resources called, inter alia, for the formation of a government-industry committee under the chairmanship of the Board.

This group, the Technical Advisory Committee on Petroleum Supply and Demand ("TAC"), became the focal point where appraisals of oil supply circumstances could be made against the background of shifting and uncertain conditions. Its basic needs for consistent operating information were met by the data flow already provided in connection with the Board's export licensing operations and by short-term regional estimates of product demand

prepared by Board staff for similar purposes. By the end of 1973, there were welcome signs that the worst effects of conceivable supply difficulties might not become a reality. The fortunate occurrence of mild weather, as well as apparent restraint on consumption in response to appeals by the Government, undoubtedly contributed significantly to the improved supply outlook. The response of the petroleum industry to the exigencies of the situation was helpful and effective. Refineries in eastern Canada were operated at exceptional capacity. At short notice, facilities for the movement of western crude oil via the Seaway from Ontario to Quebec were improvised so that, by the close of navigation, daily average rates of 100 thousand barrels a day were being achieved. By December, the first cargoes of western oil from Vancouver for movement via the Panama Canal for eastern refineries had been loaded.

With the cooperation of various government departments and agencies, a number of other changes were introduced under the aegis of the TAC, not all of which were conspicuous. Certain examples of the cooperation and response received by the Board are worth noting. The St. Lawrence Seaway Authority extended priority to vessels

in crude oil service from Ontario loading ports. To optimize the availability of individual products the Canadian Specifications Board introduced changes in product specifications and the Montreal Urban Community consented to a temporary relaxation of sulphur-content stipulations. The Government of Ontario and municipal authorities facilitated the operation of crude oil terminals, and the Government of Quebec, in conjunction with Quebec Hydro, offered if necessary to release significant volumes of reserve stocks of heavy fuel oil. The Board was especially grateful for the continuous supply analysis carried out by oil company personnel.

In mid-December the emphasis of the Board's concern over the adequacy of oil supply was turning towards the west coast. Over many years vessels loading Canadian dry cargoes for export shipment had taken bunker supplies at overseas destinations or at intermediate points on world shipping routes. In the face of supply stringency and sharply increasing costs abroad, vessels were beginning to arrive in Vancouver without bunker supplies for outward voyages. As had been indicated by advance surveys of supply capability carried out earlier in the year, refinery

capacity in British Columbia was inadequate to meet this transfer of demand; the supply of incremental foreign product had all but disappeared and it was clear that available bunkering facilities would not be adequate to service additional volumes.

By mid-December action had been taken to overcome the problem, which appeared to be complicated by the difficulties in the supply of heavy fuel oil in California, a traditional source of imported oil for industrial plant use in British Columbia. Some supplies were arranged for shipment from Eastern Canada by tanker, from Alberta by tank car and through a processing agreement with a United States refiner in the Puget Sound area to commence in January, 1974.

When mandatory export licensing for motor gasoline and middle-distillate was initiated on 15 June 1973, these products were also freed from all import regulations and placed on the duty-free list along with residual fuel oil which had been so classified since June, 1972.

Gas

Production of marketable natural gas in Canada in 1973 increased six per cent over 1972 volumes to

2,438 billion cubic feet ("Bcf"). Alberta, which produces 83 per cent of all Canadian gas, provided most of the increase, with British Columbia and the Northwest Territories also contributing. 1973 was the first full year during which the Northwest Territories contributed to Canadian gas supply.

Net sales of natural gas in Canada increased in 1973 to approximately 1,266 Bcf from 1,146 Bcf in 1972, representing a growth of 11 per cent. The Province of British Columbia had the highest rate of growth, 27 per cent, followed by Ontario, 11 per cent, Quebec, 9 per cent, and the Prairies, 5 per cent. The Eastern provinces, as a group, experienced a growth rate of 11 per cent compared with 10 per cent for Western Canada.

Industrial users recorded the highest rate of growth in consumption at 15 per cent compared with a modest increase of 3 per cent by commercial users and a decline of 3 per cent by residential users.

Exports of natural gas to United States markets increased by 3 per cent over 1972. No new export licences were approved. The determination of a surplus of natural gas was closely examined in 1973 when the Board re-opened

a previous hearing to consider a joint application by Dome Petroleum Limited and Cochin Pipe Lines Ltd. for a licence to export ethane and a certificate to construct and to operate a pipeline system. The Board heard new and more current evidence on various aspects of the application including future Canadian requirements of natural gas and ethane. This hearing, referred to in some detail in the Board's 1972 Annual Report, re-opened on 4 June 1973 and terminated 7 September 1973. By year end, no decision had been reached by the Board on this application.

Other applications relating to the export of natural gas have been submitted to the Board by Alberta and Southern Gas Co. Ltd., Pan-Alberta Gas Ltd. and Canadian-Montana Pipe Line Company.

The Board approved, in May, exports of propane for five years by Dome Petroleum Limited, Amoco Canada Petroleum Company Ltd. and Pan Canadian Gas Products Ltd.

In October, the Board granted licences to Dome Petroleum Limited to import and export propane and ethane, and issued a certificate to Dome NGL Pipeline Ltd. to construct a new pipeline from Sarnia to Windsor, Ontario. This application was unusual in that it involved a movement

of United States natural gas liquids through Canada for use in the United States. The Board felt that the project entailed important auxiliary benefits for Canada.

Throughout the year the Board maintained close liaison with other federal departments, provincial governments and industry officials regarding developments in the gas transportation sector. The creation of the British Columbia Energy Commission and the British Columbia Petroleum Corporation and the resultant changes in the natural gas distribution conditions in British Columbia, insofar as they affected Westcoast Transmission Company Limited, received particular attention. A problem of particular concern was the impairment of deliverability of natural gas to the Westcoast Transmission Company Limited system as a result of production problems at the Beaver River and Pointed Mountain fields. Westcoast has been able through other measures, to restore part of the deliverability which had been lost. Westcoast was able to meet all Canadian contract commitments, but not all of those for the export market.

The Board also contributed to interdepartmental studies and continued its own internal studies in preparation

for anticipated proposals to construct natural gas pipelines from northern areas.

ELECTRIC POWER

In 1973 the total exports of electric energy from Canada increased substantially, reaching almost 17,000 million kilowatthours, compared with 10,379 million kilowatthours in 1972. Details of the 1973 exports are shown in Appendix XIII. This compares with total Canadian electricity generation of 262,000 million kilowatthours.

During the year, the Board issued two certificates to authorize the construction of new international power lines. One certificate was granted to The British Columbia Hydro and Power Authority for a 500 kV line to Washington State, following a public hearing held in Vancouver in February. The other certificate was issued to the Hydro-Electric Power Commission of Ontario for a 345 kV line to Michigan, following a public hearing in Ottawa in April.

In February the Board conducted a public hearing in Vancouver on an application by Cominco Ltd. to export surplus power from the Company's hydroelectric generation. The application was granted and the requested licences issued.

In October the Board heard an application by The Hydro-Electric Power Commission of Ontario for a new export licence to replace an existing licence and to authorize increased export quantities. Evidence was presented that

the additional energy for export would be generated almost entirely from United States coal.

Section 19 of the Board's Part VI Regulations empowers the Board to authorize the export of power by order where emergency conditions have arisen that may cause interruptions in the supply of power to consumers in either the United States or Canada. This authority was used by the Board for the first time in 1973, and three emergency orders were issued. The first, to Cominco Ltd., authorized the export of energy to the Pacific Northwest United States, where record low river flows were creating severe shortages of electricity. The second order was granted to Ontario Hydro to provide assistance to utilities in Michigan and New York, where a combination of fuel oil shortages, generating equipment failures, plant construction delays and unit deratings had created emergency conditions. The third order was issued to Hydro-Quebec to assist Consolidated Edison Company of New York.

The Board approved 15 orders for the export of small amounts of electric power. The disposition of all power export applications dealt with during 1973 is shown in Appendix XIV.

A number of amendments to the Part VI Regulations on electric power were recommended by the Board, approved

by the Governor in Council, and issued.

The Board maintained its liaison with major Canadian electrical utilities. It continued to keep abreast of projected new power developments such as James Bay, and of new techniques in the generation and transmission of electricity.

The Board continued its participation in the Nelson River Review Committee, the Technical Advisory Committee for the Hydro-Quebec Institute of Research, the Engineering Review Committee for Tidal Power, and the Inter-Governmental Committee on a Mainland-Prince Edward Island Power Interconnection.

Observer status was maintained on the National Electric Reliability Council in the United States through representation at its executive board's quarterly meetings.

Representatives of the Board presented technical papers to the Canadian Electrical Association and the Canadian Nuclear Association. Board delegates also participated in the activities of the Canadian Standards Association and The Institute of Electrical and Electronics Engineers.

FINANCIAL MATTERS

In May 1973, the Board rendered its decision on the first application by TransCanada PipeLines Limited for orders to fix the just and reasonable rates or tolls which the company could charge with respect to gas. This was followed by further applications by TransCanada in June, August and December for further rate increases.

Westcoast Transmission Company Limited also submitted its first rate application during the year, but it was subsequently withdrawn.

The Board maintained continuing surveillance of the financial affairs of gas and oil pipeline companies under its jurisdiction. In addition to the analysis of financial statements, construction cost reports and special studies submitted by companies, the Board conducted field audits of the accounts of eight major gas and oil pipeline companies. Those companies had total assets of approximately \$2.4 billion and total revenues in excess of \$600 million.

As in previous years, the Board continued to review its Uniform Accounting Regulations for gas and oil pipeline companies to ensure that they properly reflect current accounting, industry and regulatory practices.

In this regard, work on a major revision of the Oil Pipe Line Uniform Accounting Regulations was initiated late in the year and related studies will continue into 1974.

The Board, which is responsible for ensuring an adequate export price for Canadian natural gas, initiated a review of natural gas export prices to determine the extent of the increase in prices for competing gas supplies or for alternative energy sources in the export markets served by Canadian gas. Companies holding licences to export natural gas were requested to file written submissions respecting a number of aspects associated with the pricing of natural gas exports. At year's end, the Board had decided to set this matter down for public hearing in 1974.

The Board also examined the foreign investment in Canadian energy resources and in the pipeline transportation industry, together with the Canadian content of construction projects authorized by the Board. A further continuing major study concerned the probable financing plans for the development and transportation of frontier gas and oil to marketable areas.

Close liaison was maintained with various sectors of the provincial, national and international

financial communities, and with other regulatory agencies and professional accounting associations.

APPENDIX I

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1973

<u>NATURAL GAS PIPELINES</u>	<u>APPLICANT</u>	<u>FACILITIES</u>	<u>ESTIMATED COST</u>	<u>HEARD</u>	<u>ISSUED</u>	<u>CERTIFICATE NO.</u>
1. Westcoast Transmission Company Limited		Approximately 85 miles of 36-inch diameter pipeline in the Province of British Columbia }	\$35,304,600 }	Commencing 27 March 1973 }	3 July 1973 }	GC-49
2. TransCanada Pipelines Limited		(A) Approximately 154 miles of 36-inch diameter pipeline }				
		(B) Approximately 2.8 miles of 30-inch diameter pipeline }				
		(C) Approximately 69 miles of 24-inch diameter pipeline }				
		(D) Approximately 17 miles of 16-inch diameter pipeline }				
		all in the Province of Ontario.	\$82,613,200	Commencing 14 November 1973	18 December 1973	GC-50

APPENDIX I (CONT'D)

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO SECTION 44 ISSUED DURING 1973

OIL PIPELINES

<u>APPLICANT</u>	<u>FACILITIES</u>	<u>ESTIMATED COST</u>	<u>HEARD</u>	<u>ISSUED</u>	<u>CERTIFICATE NO.</u>
1. Interprovincial Pipe Line Company (Now known as Interprovincial Pipeline Limited)	<p>(A) Approximately 142 miles of 48-inch diameter pipeline in the Provinces of Alberta, Saskatchewan and Manitoba.</p> <p>(B) Approximately 28 miles of 20-inch diameter pipeline in the Province of Ontario.</p> <p>(C) Certain pipeline modifications in the Provinces of Alberta, Saskatchewan and Manitoba.</p> <p>(D) New Pump Station and other works in the Province of Manitoba.</p> <p>(E) Additional pumping facilities transfer of existing pumping facilities, piping modifications, metering facilities and other works in the Provinces of Alberta, Saskatchewan, Manitoba and Ontario.</p> <p>(F) Additional storage facilities and Tank Farm Modifications in the Provinces of Alberta, Manitoba and Ontario</p>	\$65,850,000	Commencing 13 March 1973	3 July 1973	00-27
2. Dome NGL Pipeline Ltd.	<p>(A) Approximately 8 miles of 8.625-inch diameter pipeline</p> <p>(B) Approximately 82 miles of 12.75-inch diameter pipeline.</p> <p>all in the Province of Ontario.</p>	\$9,868,000	Commencing 6 June 1973	4 October 1973.	00-28

NEW CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY

A. ISSUED IN 1973 PURSUANT TO SECTION 44

INTERNATIONAL POWER LINES

APPLICANT

- 1. British Columbia Hydro and Power Authority

FACILITIES

One international power line to extend approximately 13.4 miles from the Applicant's Ingledow Substation in the Municipality of Surrey, British Columbia, to a point on the international boundary approximately 2,720 feet east of the point where the centre line of the Pacific Highway meets the international boundary line in the New Westminster District, British Columbia. The line shall consist of a three-phase circuit, each phase being comprised of a four-conductor bundle having a total cross-sectional area of approximately 2,500,000 circular mils of ACSR, insulated for a voltage of 500,000 volts between phases and supported on steel transmission towers.

- 2. The Hydro-Electric Power Commission of Ontario

One international power line to extend approximately 0.8 mile from the Applicant's Lambton Generating Station in the Township of Moore, Ontario, to the intersection of the said line with the international boundary line in the St. Clair River approximately two miles south of the Village of Courtright, Ontario. The line shall consist of one three-phase circuit on steel towers, constructed for 345 kv operation with one 2,332,800 circular mil ACSR conductor per phase from the switchyard of Lambton Generating Station to the anchor tower of the river crossing, a distance of approximately 0.4 mile; and for 500 kv operation with a bundle of two 2,276,000 circular mil ACSR conductors per phase from the anchor tower of the said river crossing to the international boundary line, a distance of approximately 0.4 mile.

B. ISSUED IN 1973 PURSUANT TO SECTION 47

REVOCATION

APPLICANT

- 1. British Columbia Hydro and Power Authority

DESCRIPTION

Order to revoke Certificate EC-28 issued 21 January 1960.

ESTIMATED COST

\$3,428,000

HEARD

28 February 1973

ISSUED

12 June 1973

CERTIFICATE NO.

EC-III-12

\$4,300,000

10 April 1973

3 July 1973

EC-III-13

ISSUED

17 April 1973

CERTIFICATE NO.

RO-1-EC-28

APPENDIX II

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1973

CLASS "B" CONSTRUCTION

(This is construction which at the discretion of the Board may be the subject of a specific exemption order pursuant to Section 49)

NATURAL GAS PIPELINES

- (1) Consolidated Pipe Lines Company, additional pipeline, consisting essentially of three 'Main Line Drips' and works connected therewith at separate locations in the Province of Saskatchewan. Estimated cost \$50,000. Order No. XG-1-73, dated 19 July, 1973 as amended.
- (2) Westcoast Transmission Company Limited, additional pipeline, being a new Compressor Station and works connected therewith in the Province of British Columbia. Estimated cost \$859,000. Order No. XG-2-73, dated 1 November, 1973.
- (3) Westcoast Transmission Company Limited, approximately 6.8 miles of 16-inch diameter line of pipe and works connected therewith in the Province of British Columbia. Estimated cost \$282,000. Order No. XG-3-73, dated 1 November, 1973.
- (4) TransCanada PipeLines Limited, additional pipeline, being a meter station and works connected therewith in the Province of Ontario. Estimated cost \$30,850. Order No. XG-4-73, dated 29 November, 1973.

OIL PIPELINES

- (1) Cochin Pipe Lines Ltd., two 12.750-inch OD lines of pipe each approximately 1.25 miles in length, two 10.750-inch OD lines of pipe each approximately 0.25 of a mile in length, one pump station including certain metering facilities and other works connected therewith, all in the Province of Ontario. Estimated cost \$1,270,000. Order No. XO-1-73, dated 10 January, 1973 as amended.

APPENDIX II (CONT'D)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1973

CLASS "B" CONSTRUCTION

OIL PIPELINES (cont'd)

- (2) Trans-Northern Pipe Line Company, approximately 4,285 feet of 12-inch diameter line of pipe and works connected therewith, modifications and additions to the existing Ottawa Meter Station site, all in the Province of Ontario. Estimated cost \$235,000. Order No. XO-2-73, dated 19 April, 1973.
- (3) Wascana Pipe Line Ltd., additional pipeline, consisting essentially of one 600 horsepower electric motor-driven pumping unit and works connected therewith, in the Province of Saskatchewan. Estimated cost \$80,000. Order No. XO-3-73, dated 10 May, 1973, as amended.
- (4) The Imperial Pipe Line Company, Limited, additional pipeline, consisting essentially of one 1,500 horsepower electric motor-driven pumping unit and works connected therewith, in the Province of Alberta. Estimated cost \$350,000. Order No. XO-4-73, dated 14 June, 1973, as amended.
- (5) Trans-Northern Pipe Line Company, additional pipeline, consisting essentially of one 700 horsepower electric motor-driven pumping unit and works connected therewith, in the Province of Ontario. Estimated cost \$110,000. Order No. XO-5-73, dated 19 July, 1973.
- (6) Trans-Northern Pipe Line Company, additional pipeline, consisting essentially of approximately 1,200 feet of 16-inch diameter line of pipe, in the Province of Ontario. Estimated cost \$60,000. Order No. XO-6-73, dated 9 August, 1973, as amended.
- (7) Dome NGL Pipeline Ltd., additional pipeline, consisting essentially of nine portions of 10-inch diameter lines of pipe, having a total length of approximately 0.8 of a mile, in the Province of Ontario. Estimated cost \$165,000. Order No. XO-7-73, dated 25 October, 1973.

APPENDIX II (CONT'D)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1973

CLASS "C" CONSTRUCTION

OIL PIPELINES

- (1) Montreal Pipe Line Company Limited, for certain miscellaneous facilities to be added to its pipeline in the Province of Quebec. Estimated cost \$89,800. Order No. XOM-1-73, dated 1 March, 1973, as amended.
- (2) Trans Mountain Pipe Line Company Ltd., for certain miscellaneous facilities to be added to its pipeline in the Provinces of Alberta and British Columbia. Estimated cost \$2,425,100. Order No. XOM-2-73, dated 1 March, 1973, as amended.
- (3) Interprovincial Pipe Line Company, now known as Interprovincial Pipe Line Limited, for certain miscellaneous facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan, Manitoba and Ontario. Estimated cost \$228,800. Order No. XOM-3-73, dated 1 March, 1973, as amended.
- (4) Westspur Pipe Line Company, for certain miscellaneous facilities to be added to its pipeline in the Provinces of Saskatchewan and Manitoba. Estimated cost \$377,200. Order No. XOM-4-73, dated 29 March, 1973.
- (5) Petroleum Transmission Company, for certain miscellaneous facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan and Manitoba. Estimated cost \$15,000. Order No. XOM-5-73, dated 3 May, 1973.
- (6) Yukon Pipelines Limited, for certain miscellaneous facilities to be added to its pipeline in the Province of British Columbia and the Yukon Territory. Estimated cost \$113,000. Order No. XOM-6-73, dated 15 June, 1973.
- (7) Trans-Northern Pipe Line Company, for certain miscellaneous facilities to be added to its pipeline in the Provinces of Quebec and Ontario. Estimated cost \$300,000. Order No. XOM-7-73, dated 1 November, 1973.

APPENDIX II (CONT'D)

EXEMPTION ORDERS PURSUANT TO SECTION 49

ISSUED DURING 1973

CLASS "B" CONSTRUCTION

OIL PIPELINES (cont'd)

- (8) Trans-Northern Pipe Line Company, additional pipeline, consisting essentially of one 600 horsepower electric motor-driven pumping unit, certain piping modifications and works connected therewith, all in the Province of Ontario. Estimated cost \$66,000. Order No. XO-8-73, dated 29 November, 1973, as amended.

CLASS "C" CONSTRUCTION

NATURAL GAS PIPELINES

- (1) ICG Transmission Limited, for certain miscellaneous facilities to be added to its pipeline in the Provinces of Manitoba and Ontario. Estimated cost \$19,800. Order No. XGM-1-73, dated 29 March, 1973.
- (2) Alberta Natural Gas Company Ltd. for certain miscellaneous facilities to be added to its pipeline in the Provinces of Alberta and British Columbia. Estimated cost \$300,443. Order No. XGM-2-73, dated 3 May, 1973.
- (3) TransCanada PipeLines Limited, for certain miscellaneous facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Quebec. Estimated cost \$17,894,831. Order No. XGM-3-73, dated 7 June, 1973.
- (4) Westcoast Transmission Company Limited, for certain miscellaneous facilities to be added to its pipeline in the Provinces of Alberta and British Columbia, and the Yukon and Northwest Territories. Estimated cost \$4,925,351. Order No. XGM-4-73, dated 7 June, 1973.

APPENDIX III

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS AND ETHANE ISSUED DURING 1973

A. LICENCES - NATURAL GAS EXPORT - SECTION 82

NONE ISSUED

B. LICENCES - ETHANE EXPORT - SECTION 82

APPLICANT	LICENCE NUMBER	DATE OF ISSUE	POINT OF EXPORT	TERM		MAXIMUM EXPORT VOLUMES ANNUAL (Bbls)
				FROM	TO	
1. Dome Petroleum Limited	GL-45(a)	4/10/73	Windsor, Ontario	1/4/73	31/3/84	2,000,000 20,000,000

(a) The quantity of ethane which is imported at Sarnia, Ont., under the authority of this licence shall be equal to the quantities of ethane which the Licensee exports under the authority of this licence.

C. ORDERS AMENDING EXISTING NATURAL GAS EXPORT LICENCES - SECTION 17

APPLICANT	ORDER NUMBER	DATE OF ISSUE	COMMENTS	
1. Niagara Gas Transmission Limited	AO-7-GL-6	16/1/73	(1)	Licence amendment defining the annual limitation as commencing on 1 November each year.
2. TransCanada Pipelines Limited	AO-4-GL-18	4/12/73	(1)	Licence amendment providing that the prices to be received for gas by the Licensee shall not be less than those as specified in the agreements referred to in the said licence.
3. Canadian-Montana Pipe Line Company	AO-3-GL-25	27/3/73	(1)	Licence amendment changing the daily and annual export quantities but not affecting the total quantity of gas authorized for export under Licence No. GL-25.
4. ICG Transmission Limited	AO-2-GL-28	9/1/73	(1)	Licence amendment providing for an averaging of annual gas volumes exported pursuant to this licence
5. ICG Transmission Limited	AO-2-GL-29	9/1/73	(1)	Licence amendment providing that a portion of the gas initially authorized for export near Sprague, Manitoba, under licence GL-28 may be exported at Fort Frances, Ontario.
			(11)	Licence amendment providing for an averaging of the annual gas volumes exported pursuant to Licence No. GL-29.

APPENDIX III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS AND ETHANE ISSUED DURING 1973

C. ORDERS AMENDING EXISTING NATURAL GAS EXPORT LICENCES - SECTION 17

<u>APPLICANT</u>	<u>ORDER NUMBER</u>	<u>DATE OF ISSUE</u>	<u>COMMENTS</u>
6. ICG Transmission Limited	AO-1-GL-30	9/1/73	(1) Licence amendment providing for the temporary transportation of additional volumes of gas and
7. Westcoast Transmission Company Limited	AO-1-GL-41	4/12/73	(11) Licence amendment providing for an averaging of annual gas volumes exported pursuant to this licence. (1) Licence amendment providing for a second point of delivery at Kingsgate, B.C., in addition to the point of delivery at Huntingdon, B. C.

D. ORDERS - NATURAL GAS EXPORT - PART VI REGULATIONS - SECTION 18

<u>APPLICANT</u>	<u>ORDER NUMBER</u>	<u>DATE OF ISSUE</u>	<u>POINT OF EXPORT</u>	<u>TERM FROM TO</u>	<u>EXPORT VOLUMES</u>
1. Gaz Métropolitain, inc.	EO-1-73	15/2/73	Montreal, Que. (truck)	15/2/73 30/4/73	2,141,692 U.S. gallons LNG*

E. ORDERS - NATURAL GAS EXPORT - PART VI REGULATIONS - SECTION 6B

<u>APPLICANT</u>	<u>ORDER NUMBER</u>	<u>DATE OF ISSUE</u>	<u>POINT OF EXPORT</u>	<u>TERM FROM TO</u>	<u>EXPORT VOLUMES</u>
1. Gaz Métropolitain, inc.	GO-2-73	13/7/73	Montreal, Que. (truck)	13/7/73 31/12/73	9,167,000 U.S. gallons LNG*

*LNG - Liquefied Natural Gas

APPENDIX IV
SUBSISTING LICENCES TO EXPORT NATURAL GAS, PROPANE AND ETHANE AS AT 31 DECEMBER 1973

A. NATURAL GAS	EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES		
				FROM	TO	DAILY (MMcf)	ANNUAL (MMcf)	TERM (MMcf)
1.	TransCanada Pipelines Limited	GL-1(AO-2)	Emerson, Man.	11/4/60	14/5/81	223,000	74,000	1,410,000
2.	Alberta & Southern Gas Co. Ltd.	GL-3(AO-3)	Kingsgate, B.C.	31/10/61	31/10/86	458,750	153,270	3,826,000
3.	Westcoast Transmission Company Limited	GL-4(AO-4)	Kingsgate, B.C.	10/12/61	10/12/81	152,000	51,000	1,020,000
4.	Canadian-Montana Pipe Line Company	GL-5(AO-3)	Cardston, Alta.	31/10/61	31/10/86	36,000	10,950	273,750
5.	Niagara Gas Transmission Limited	GL-6(AO-7)	Cornwall, Ont.	7/9/62	30/6/87	23,000(a)	5,520(a)	121,190
6.	Alberta & Southern Gas Co. Ltd.	GL-16(AO-1)	Kingsgate, B.C.	1/11/66 1/11/67	31/10/67 31/10/89	113,125 226,250	37,415 74,830	1,614,000
7.	Canadian-Montana Pipe Line Company	GL-17(AO-1)	Cardston, Alta.	1/11/66 1/11/67	31/10/67 31/10/89	12,000 24,000	3,650 7,300	164,250 164,250
8.	TransCanada Pipelines Limited	GL-18(AO-4)	Emerson, Man.	22/11/65 1/11/66	31/10/68 31/10/89	25,000 143,000	8,000(b) 52,300	1,200,000
9.	TransCanada Pipelines Limited	GL-19(AO-2)	Phillipsburg, Que.	1/11/65	31/10/89	17,700	6,500	108,000
10.	TransCanada Pipelines Limited	GL-20(AO-6)	Emerson, Man.	21/11/68	31/10/91	87,600	32,100	765,000
11.	TransCanada Pipelines Limited	GL-21(AO-5)(c)	Emerson, Man.	5/11/68	31/10/91	N/S	247,782	6,000,000
12.	Alberta & Southern Gas Co. Ltd.	GL-24(AO-2)	Kingsgate, B.C.	1/11/68 1/11/69 1/11/91	31/10/69 31/10/91 31/10/93	121,000 236,000 135,400	38,900 77,900 44,600	1,841,900
13.	Canadian-Montana Pipe Line Co.	GL-25(AO-3)	Cardston, Alta.	1/11/68 1/11/69 1/11/91(d) 27/3/73	31/10/69 31/10/91 31/10/93 5/14/74	12,000 24,000 13,800 99,460	3,650 7,300 4,200 N/S	172,650
14.	ICG Transmission Limited	GL-28(AO-2)	Aden, Alta.	1/11/70	31/10/95	1,634	337	8,084
15.	ICG Transmission Limited	GL-29(AO-2)	Sprague, Man. Fort Frances, Ont.	1/11/70	31/10/95	22,023	7,715	192,820

APPENDIX IV (CONT'D)

SUBSISTING LICENCES TO EXPORT NATURAL GAS, PROPANE AND ETHANE AS AT 31 DECEMBER 1973

A. NATURAL GAS

EXPORTER	LICENCE OF ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM EXPORT VOLUMES		
			FROM	TO	DAILY (MMcf)	ANNUAL (MMcf)	TERM (MMcf)
16. ICG Transmission Limited	GL-30(AO-1)(e)	Sprague, Man.	1/11/70	31/10/95	36,366	12,144	299,990
17. Alberta & Southern Gas Co. Ltd.	GL-35	Kingsgate, B.C.	1/11/70	31/10/85	205,000	67,500	1,012,500
18. Canadian-Montana Pipe Line Co.	GL-36	Cardston, Alta.	1/11/70	31/10/85	12,000	3,650	54,750
19. TransCanada PipeLines Limited	GL-37(AO-1)	Emerson, Man.	1/11/70	31/10/90	195,800	71,663	1,433,256
20. TransCanada PipeLines Limited	GL-38(AO-1)	Emerson, Man.	1/11/70	31/10/90	50,000	18,300	366,000
21. TransCanada PipeLines Limited	GL-39(AO-1)	Emerson, Man.	1/11/70	31/10/90	7,200	2,635	52,704
22. Westcoast Transmission Company Limited	GL-41(AO-1)	Huntingdon, B.C.	1/11/71 1/11/72	31/10/72 31/10/89	733,338 809,200	254,982 281,359	5,042,860
23. TransCanada Pipelines Limited	GL-42(c)	Emerson, Man.	15/ 4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	2,129,232
24. TransCanada PipeLines Limited	GL-43	Emerson, Man.	1/11/71	31/10/91	N/S	17,000	340,000
25. Consolidated Natural Gas	GL-44(f)	Emerson, Man.	15/ 3/72	31/10/92	150,000	45,000	669,000
26. Gaz Métropolitain, inc.	GO-2-73	Montreal, Que. (truck)	13/ 7/73	31/12/73	N/S	N/S	9,167,000

U.S. gallons
LNG*

N/S Not specified.

* Liquefied natural gas.

(a) There was an exception for the period 23/12/70 to 31/12/71 when exports of 30,000 Mcf daily and 6,700 Mcf were authorized.

(b) Interruptible.

(c) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(d) This export actually commenced on the day when the total quantity of gas authorized by Licence No. GL-8 was exported (approximately June 1973).

(e) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(f) This licence authorizes an export near Emerson, Manitoba. The quantity of gas exported under the authority of this licence shall be equal to the quantities of gas which the Licence imports pursuant to Licence GLI-5.

APPENDIX IV (CONT'D)

SUBSISTING LICENCES TO EXPORT NATURAL GAS, PROPANE AND ETHANE AS AT 31 DECEMBER 1973

B. PROPANE

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUMES	
			FROM	TO	COLUMN A (BARRELS)	COLUMN B
1. Dome Petroleum Limited	GL-31(AO-3)(a)	Gretna, Man. Sarnia, Ont. and Windsor, Ont.	5/6/73	31/12/73	6,287,500	5,827,500
			1/1/74	31/12/74	5,991,500	5,481,500
			1/1/75	31/12/75	5,913,000	5,338,000
			1/1/76	31/12/76	5,751,500	5,121,500
			1/1/77	31/12/77	5,582,500	4,887,500
			1/1/78	31/12/78	5,457,000	839,500
			1/1/79	31/12/79	5,357,000	839,500
			1/1/80	31/12/80	5,263,000	839,500
			1/1/81	31/12/81	5,114,000	839,500
			1/1/82	31/12/82	4,948,500	839,500
			1/1/83	31/12/83	4,665,500	839,500
			1/1/85	31/12/85	3,898,000	839,500
			1/1/86	31/12/86	3,362,000	839,500
			1/1/87	31/12/87	2,930,500	906,000
			1/1/88	31/12/88	2,489,000	1,216,000
			1/1/89	31/12/89	2,078,000	1,241,000
			1/1/90	31/12/90	1,690,000	1,065,000
			1/1/91	31/12/91	1,396,000	1,045,000
			1/1/92	31/12/92	1,339,500	1,040,000
			1/1/93	31/12/93	1,233,500	1,025,000
			1/1/94	31/12/94	1,011,000	655,000
			1/1/95	31/12/95	294,000	0
2. Amoco Canada Petroleum Company Ltd.	GL-32(AO-2)(c)	Gretna, Man. Sarnia, Ont.	5/6/73	31/12/73	3,872,500	3,589,500
			1/1/74	31/12/74	3,579,000	3,274,000
			1/1/75	31/12/75	3,533,000	3,189,000
			1/1/76	31/12/76	3,421,500	3,046,500
			1/1/77	31/12/77	3,287,000	2,878,000
			1/1/78	31/12/78	3,197,500	584,000
			1/1/79	31/12/79	3,133,500	584,000
			1/1/80	31/12/80	3,077,000	584,000
			1/1/81	31/12/81	2,987,500	584,000
			1/1/82	31/12/82	2,943,500	584,000
			1/1/83	31/12/83	2,832,500	584,000
			1/1/84	31/12/84	2,610,000	584,000
			1/1/85	31/12/85	2,401,500	584,000
			1/1/86	31/12/86	2,182,500	584,000
			1/1/87	31/12/87	2,024,000	584,000
			1/1/88	31/12/88	1,838,000	584,000
			1/1/89	31/12/89	1,690,000	584,000
			1/1/90	31/12/90	1,546,000	584,000
			1/1/91	31/12/91	1,396,000	584,000
			1/1/92	31/12/92	1,339,500	584,000
			1/1/93	31/12/93	1,233,500	584,000
			1/1/94	31/12/94	1,011,000	486,400
			1/1/95	31/12/95	294,000	0

APPENDIX IV (CONT'D)

SUBSISTING LICENCES TO EXPORT NATURAL GAS, PROPANE AND ETHANE AS AT 31 DECEMBER 1973

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUMES	
			FROM	TO	COLUMN A (BARRELS)	COLUMN B
3. PanCanadian Gas Products Ltd.	GL-34(AO-2)(e)	Gretna, Man., Sarnia, Ont.	5/6/73 (f)	31/12/73	2,415,000	2,238,000
			1/1/74	31/12/74	2,412,500	2,207,500
			1/1/75	31/12/75	2,380,000	2,149,000
			1/1/76	31/12/76	2,330,000	2,075,000
			1/1/77	31/12/77	2,295,500	2,009,500
			1/1/78	31/12/78	2,259,500	401,500
			1/1/79	31/12/79	2,223,500	401,500
			1/1/80	31/12/80	2,186,000	401,500
			1/1/81	31/12/81	2,126,500	401,500
			1/1/82	31/12/82	2,005,000	401,500
			1/1/83	31/12/83	1,833,000	401,500
			1/1/84	31/12/84	1,706,500	401,500
			1/1/85	31/12/85	1,496,500	401,500
			1/1/86	31/12/86	1,179,500	335,000
			1/1/87	31/12/87	906,500	25,000
			1/1/88	31/12/88	651,000	0
			1/1/89	31/12/89	388,000	0
			1/1/90	31/12/90	144,000	0

4. Dome Petroleum Limited	GL-46(g)	Windsor, Ont.	1/4/74	31/03/84	3,000,000	30,000,000
5. Amoco Canada Petroleum	GO-1-73	Gretna, Man (h)	19/4/73	19/04/74	365,000	365,000

a) This licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-26 with Licence No. GL-31 whereby certain quantities of the propane exported near Gretna, Manitoba is imported into and exported from Sarnia, Ontario, and exported at Windsor, Ontario. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.

b) This period includes the volumes of propane exported and imported pursuant to Licences GL-26 and GL-31 during the part of 1973 prior to the day of issue of this order.

c) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-27 with Licence No. GL-32. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.

d) This period includes the volumes of propane exported and imported pursuant to Licences GL-27 and GL-32 during the part of 1973 prior to the day of the issue of this order.

e) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.

APPENDIX IV (CONT'D)

SUBSISTING LICENCES TO EXPORT NATURAL GAS, PROPANE AND ETHANE AS AT 31 DECEMBER 1973

- f) This period includes the volumes of propane exported and imported pursuant to Licences GL-33 and GL-34 during the part of 1973 prior to the day of the issue of this order.
- g) This is an import-export licence whereby no propane may be exported at Windsor, Ontario, that has not been imported at Sarnia, Ontario.
- h) This licence provides the option of storing and processing the propane exported pursuant to this Order at Sarnia, Ontario, but all such stored and processed propane shall be returned to the U.S.A. prior to the expiration of this Order.

C. ETHANE

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUMES	
			FROM	TO	COLUMN A (BARRELS)	COLUMN B
1. Dome Petroleum Limited	GL-45(a)	Windsor, Ont.	1/4/74	31/3/84	2,000,000	20,000,000

- a) This licence authorizes an export near Windsor, Ontario. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the Licensee imports near Sarnia, Ontario.

APPENDIX V
EXPORTS OF NATURAL GAS

A. NATURAL GAS

EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/73	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
	DAILY (McF)	ANNUAL (MMcf)	1969	1970	1971	1972	1973			
1. TransCanada Pipelines Limited GL-1 (AO-2)	223,000	74,000	74,188	73,741	74,057	73,904	73,687	933,755	1,410,000	476,245
2. TransCanada Pipelines Limited GL-2 (AO-7)	96,900 (b)	20,663 (b)	11,099	28,019	19,170	3,672	-	62,415	N/S	N/A
3. Alberta & Southern Gas Co. Ltd. GL-3 (AO-3) (c)	458,750	153,270	164,895	166,624	167,484	167,436	157,381	1,859,718	3,826,000	1,966,282
4. Westcoast Transmission Company Limited GL-4 (AO-4)	152,000	51,000	47,990	49,159	51,215	50,945	50,145	554,078	1,020,000	465,922
5. Canadian-Montana Pipe Line Company GL-5 (AO-3) (c)	36,000	10,950	11,966	10,992	10,792	12,068	11,525	133,202	273,750	140,548
6. Niagara Gas Transmission Limited GL-6 (AO-7)	23,000 (d)	5,520 (d)	5,361	5,495	5,946	5,899	5,547	47,173	121,190	74,017
7. Patrick T. Buckley GL-7 (AO-1)	(e)	10	-	-	-	-	-	22	N/S	N/A
8. Canadian-Montana Pipe Line Company GL-8 (AO-1)	99,460	19,892	17,176	17,429	16,021	16,391	7,833	220,000	220,000	N/A
9. Alberta & Southern Gas Co. Ltd. GL-16 (AO-1) (c) 01/11/66 - 31/10/67 01/11/67 - 31/10/89	113,125 226,250	37,415 74,830	52,769	77,058	65,517	74,459	77,768	471,725	1,614,000	1,142,275

APPENDIX V (cont'd)
EXPORTS OF NATURAL GAS

A. NATURAL GAS

EXPORTER AND LICENCE/ORDER	MAXIMUM		(Mmcf)					CUMULATIVE TO 31/12/73	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
	DAILY (Mcf)	ANNUAL (Mmcf)	1969	1970	1971	1972	1973			
10. Canadian-Montana Pipe Line Company GL-17 (AO-1) (c) 01/11/66 - 31/10/67 01/11/67 - 31/10/89	12,000 24,000	3,650 7,300	6,405	7,326	7,195	8,054	7,674	48,465)	164,250	115,785
11. TransCanada Pipelines Limited GL-18 (AO-4) 22/11/65 - 31/10/68 (g) 01/11/66 - 31/10/89	25,000 143,000	8,000 52,300	43,604	47,547	42,855	42,578	42,615	7,999) 266,800	1,200,000	933,200
12. TransCanada Pipelines Limited GL-19 (AO-2)	17,700	6,500	2,095	2,532	2,820	3,745	3,912	17,439	108,000	90,561
13. TransCanada Pipelines Limited GL-20 (AO-6)	87,600	32,100	19,895	36,990	30,492	31,768	31,974	152,192	765,000	612,808
14. TransCanada Pipelines Limited GL-21 (AO-5)	N/S	247,782	159,449	230,392	222,465	221,055	227,878	1,081,145	6,000,000	4,918,855
15. TransCanada Pipelines Limited GL-22 (AO-4)	N/S	N/S	-	-	-	-	-	2,592	3,000	N/A
16. Westcoast Transmission Company Limited PC1955-958 (AO-2) (d) 1955 - 31/12/65 01/01/66 - 02/10/77	304,000 303,450	100,000 N/S	103,163	104,361	85,892	-	-	724,280 631,871	N/A	N/A

A. NATURAL GAS	EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/68	CUMULATIVE TO 31/12/73	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
		DAILY (McF)	ANNUAL (MMcf)	1969	1970	1971	1972	1973				
17.	Westcoast Transmission Company Limited GL-23 (AO-7)											
	01/11/66 - 31/10/67	101,150	36,920						(	)	N/A	N/A
	01/11/67 - 21/02/68	101,150	24,579	68,775	69,737	57,262	-	-	(61,338	257,112)		
	22/02/68 - 31/10/88	202,300	74,040						()		
18.	Alberta & Southern Gas Co. Ltd. GL-24 (AO-2)											
	01/11/68 - 31/10/69	121,000	38,900						()		
	01/11/69 - 31/10/91	236,000	77,900	46,445	50,644	60,002	70,075	83,508	(6,173	316,847)	1,841,900	1,525,053
	01/11/91 - 31/10/93	135,400	44,600						()		
19.	Canadian-Montana Pipe Line Company GL-25 (AO-3)											
	01/11/68 - 31/10/69	12,000	3,650						()		
	01/11/69 - 31/10/91	24,000	7,300	4,283	6,572	7,195	8,054	7,674	(-	33,778)	172,650	138,872
	01/11/91 - 31/10/93	13,800	4,200	-	-	-	-	11,516	(-	11,516)	19,892	8,376
	26/06/73 - 14/05/74	113,460	27,192	-	-	-	-	-	(-	-	8,084	7,686
20.	ICG Transmission Limited GL-28 (AO-2)	1,634	337	-	10	5	135	248	-	398		
21.	ICG Transmission Limited GL-29 (AO-2)	22,023	7,715	-	-	7,109	8,027	7,650	-	22,786	192,820	170,034
22.	ICG Transmission Limited GL-30 (AO-1)	36,366	12,144	-	45	9,100	11,500	10,286	-	30,931	299,990	269,059

APPENDIX V (cont'd)
EXPORTS OF NATURAL GAS

A. NATURAL GAS

EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)						CUMULATIVE TO 31/12/68	CUMULATIVE TO 31/12/73			TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
	DAILY (McF)	ANNUAL (MMcf)	1969	1970	1971	1972	1973	1973						
23. Alberta & Southern Gas Co. Ltd. GL-35	205,000	67,500	-	10,155	61,000	71,920	68,867	211,942	-	1,012,500	800,558			
24. Canadian-Montana Pipe Line Company GL-36	12,000	3,650	-	241	3,445	4,023	3,841	11,550	-	54,750	43,200			
25. TransCanada Pipelines Limited GL-37 (AO-1)	195,800	71,663	-	11,944	68,155	72,143	71,467	223,709	-	1,433,256	1,209,547			
26. TransCanada Pipelines Limited GL-38 (AO-1)	50,000	18,300	-	2,332	18,250	18,300	18,250	57,132	-	366,000	308,868			
27. TransCanada Pipelines Limited GL-39 (AO-1)	7,200	2,635	-	439	2,572	2,635	2,630	8,276	-	52,704	44,428			
28. Westcoast Transmission Company Limited GL-40 (AO-1) (i)	75,863	27,770	-	-	2,560	-	-	2,560	-	N/A	N/A			
29. Westcoast Transmission Company Limited GL-41 (AO-1) (i)	753,338 809,200	254,982 281,359	-	-	43,421	255,496	-	298,917 267,753	-	5,042,860	4,476,190			
01/11/71 - 31/10/72			-	-	-	-	-							
01/11/72 - 31/10/89			-	-	-	-	267,753							

A. NATURAL GAS	EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)						CUMULATIVE TO 31/12/68	1969	1970	1971	1972	1973	CUMULATIVE TO 31/12/73	TOTAL AUTHORIZED EXPORTS	REMAINING (a) UNDER LICENCES
		DAILY (McF)	ANNUAL (MMcf)															
30.	TransCanada Pipelines Limited GL-42 (1) 15/04/71 - 31/10/71 01/11/71 - 31/10/94	N/S N/S	8,218 92,218	- -	- -	- -	7,310 10,387	- -	- -	- -	- -	82,271 84,811	- -	7,310 177,469	2,129,232	1,944,453		
31.	TransCanada Pipelines Limited GL-43	N/S	17,000	-	-	-	347	-	-	-	-	7,536 13,914	21,797	340,000	318,203			
32.	Consolidated Natural Gas Limited GL-44 (1)	150,000	45,000	-	-	-	-	-	2,669	28,336	31,005	669,000	637,995					
33.	Patrick T. Buckley GO-1-68	(k)	5	-	-	-	-	-	-	-	-	-	N/S	N/A				
34.	Union Gas Company of Canada, Limited EO-2-63	N/S	N/S	55	-	-	-	-	-	-	55	200	N/A					
35.	TransCanada Pipelines Limited EO-1-70	N/S	N/S	-	-	25	-	-	-	-	25	40	N/A					
36.	TransCanada Pipelines Limited EO-6-70	N/S	N/S	-	-	124	-	-	-	-	124	125	N/A					
37.	TransCanada Pipelines Limited EO-2-72	N/S	N/A	-	-	-	-	-	120	-	120	N/S	N/A					
38.	TransCanada Pipelines Limited EO-5-72	40,000	N/S	-	-	-	-	-	21	-	21	40	N/A					

APPENDIX V (cont'd)
EXPORTS OF NATURAL GAS

A. NATURAL GAS

EXPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)					CUMULATIVE TO 31/12/68	TOTAL AUTHORIZED EXPORTS		REMAINING (a) UNDER LICENCES
	DAILY (McF)	ANNUAL (MMcf)	1969	1970	1971	1972	1973				
39. Gaz Métropolitain, inc. EO-2-70 (AO-1)	N/A	N/A	-	151	-	-	-	-	151	N/A	N/A
40. Gaz Métropolitain, inc. EO-3-70 (AO-1)	N/A	N/A	-	108	-	-	-	-	108	N/A	N/A
41. Gaz Métropolitain, inc. EO-5-70 (AO-1)	N/A	N/A	-	374	240	-	-	-	614	N/A	N/A
42. Gaz Métropolitain, inc. EO-8-70	N/A	N/A	-	57	93	-	-	-	150	N/A	N/A
43. Gaz Métropolitain, inc. EO-2-71	N/A	N/A	-	-	491	-	-	-	491	N/A	N/A
44. Gaz Métropolitain, inc. EO-3-71	N/A	N/A	-	-	537	-	-	-	537	N/A	N/A
45. Gaz Métropolitain, inc. EO-4-71	N/A	N/A	-	-	84	-	-	-	84	N/A	N/A
46. Gaz Métropolitain, inc. EO-7-72	N/A	N/A	-	-	-	247	-	-	247	N/A	N/A
47. Gaz Métropolitain, inc. EO-1-73	N/A	N/A	-	-	-	-	9	-	9	N/A	N/A

APPENDIX V (cont'd)
EXPORTS OF NATURAL GAS

A. NATURAL GAS EXPORTER AND LICENCE/ORDER	MAXIMUM		(Mmcf)						TOTAL AUTHORIZED EXPORTS (m)	REMAINING UNDER LICENCES (a)
	DAILY (Mcf)	ANNUAL (Mmcf)	CUMULATIVE TO 31/12/68	1969	1970	1971	1972	1973		
48. Gaz Métropolitain, inc. GO-2-73	N/A	N/A	-	-	-	-	-	708	708	N/A
Gross Exports			3,492,883	839,558	1,010,623	1,161,486	1,327,146	1,379,407	9,211,103	
Deduct Re-Export of Imports:			-	-	-	-	2,669	28,336	31,005	
Item 32, GL-44 (1)										
Deduct exports for Re-Import:			19,906	159,449	230,392	222,465	221,055	227,878	1,081,145	
Item 14, GL-21 (h)			-	-	45	9,100	11,500	10,286	30,931	
Item 22, GL-30 (j)			-	-	-	17,697	82,271	84,811	184,779	
Item 30, GL-42 (h)			-	-	-	-	-	-	-	
Net Exports			3,472,977	680,109	780,186	912,224	1,009,651	1,028,096	7,883,243	

APPENDIX V (cont'd)
EXPORTS OF NATURAL GAS

A. NATURAL GAS

FOOTNOTES:

- (a) It may not be possible to export total volumes remaining under licences due to restrictions on peak day and annual volumes.
- (b) This licence authorizes an export of 30,000 MMcf in the period 01/11/70 to 31/03/72 and an additional export of 15,000 MMcf on an interruptible basis in the year commencing 1 November 1970.
- (c) Volumes exceed licenced annual amounts due to make-up of accumulated shortfalls from previous years as authorized by licence.
- (d) This licence authorizes daily and annual exports of 30,000 Mcf and 6,700 MMcf respectively during the period 23/12/70 to 31/12/71.
- (e) 1,300 Mcf per month.
- (f) Excludes exports prior to 01/09/60, effective commencement date of licence GL-8.
- (g) Interruptible.
- (h) This licence authorizes an export at Emerson, Manitoba for re-import at Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.
- (i) On the day that first delivery of gas was made under licence GL-41, licences PC1955-958, GL-23 and GL-40 were revoked.
- (j) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

A. NATURAL GAS

FOOTNOTES: (cont'd)

- | | |
|-----|--|
| (K) | 1,000 Mcf per month. |
| (1) | This licence authorizes the export at Emerson, Manitoba of those volumes imported into Canada pursuant to licence GLL-5. |
| (m) | This licence authorizes an export of 9,167,000 U.S. gallons. |
| N/S | Not specified |
| N/A | Not applicable |
| -- | Amount too small to be expressed. |

* * *

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE AND ETHANE ISSUED DURING 1973

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APPENDIX VI

A. LICENCES - NATURAL GAS IMPORT - SECTION 82

NONE ISSUED

B. LICENCES - PROPANE IMPORT - SECTION 82

APPLICANT	LICENCE NUMBER	DATE OF ISSUE	POINT OF IMPORT	TERM		MAXIMUM IMPORT VOLUMES ANNUAL (Bbls)
				FROM	TO	
1. Dome Petroleum Limited	GL-46	4/10/73	Sarnia, Ont.	1/4/74	31/3/84	3,000,000
						30,000,000

C. LICENCES - ETHANE IMPORT - SECTION 82

1. Dome Petroleum Limited	GL-45	4/10/73	Sarnia, Ont.	1/4/74	31/3/84	2,000,000
						20,000,000

D. ORDERS EXISTING NATURAL GAS IMPORT LICENCES - SECTION 17

APPLICANT	ORDER NUMBER	DATE OF ISSUE	COMMENTS	
1. ICG Transmission Limited	AO-1-GL-30	9/1/73	(1) Amendment for temporary transportation of additional volumes of gas, and,	
			(11) Amendment providing for an averaging of annual gas volumes exported.	
2. Consolidated Natural Gas Limited	AO-1-GLI-5	12/4/73	(1) Amendment in measurement requirements.	

E. ORDERS AMENDING EXISTING PROPANE IMPORT LICENCES - SECTION 17

1. Dome Petroleum Limited	RO-1-GL-26	2/5/73	(1) Licence amendment revoking licence No. GL-26 in order to combine the Licensee's propane export and import authorizations under Licence No. GL-31.
2. Amoco Canada Petroleum Company Limited	RO-1-GL-27	2/5/73	(1) Licence amendment revoking Licence No. GL-27 in order to combine the Licensee's propane export and import authorizations under Licence No. GL-32.
3. Dome Petroleum Limited	AO-2-GL-31	2/5/73	(1) Licence amendment combining certain propane volumes authorized for export and import under Licence No. GL-26 with Licence No. GL-31.
4. Amoco Canada Petroleum Company Limited	AO-2-GL-32	2/5/73	(1) Licence amendment combining certain propane volumes authorized for export and import under Licence No. GL-27 with Licence No. GL-32.
5. TransCanada Gas Products Ltd.	RO-1-GL-33	2/5/73	(1) Licence amendment revoking Licence No. GL-33 at the request of the licensee in order to combine its propane export and import authorizations under Licence No. GL-34, and

APPENDIX VI (CONT'D)

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE AND ETHANE ISSUED DURING 1973

E. ORDERS AMENDING EXISTING PROPANE IMPORT LICENCES - SECTION 17

<u>APPLICANT</u>	<u>ORDER NUMBER</u>	<u>DATE OF ISSUE</u>	<u>COMMENTS</u>
6. TransCanada Gas Products Ltd.	AO-2-GL-34	2/5/73	(11) Licence amendment providing for the name of the Licensee to be changed to PanCanadian Gas Products Ltd. (1) Licence amendment combining certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34.

F. ORDERS - NATURAL GAS IMPORT - PART VI REGULATIONS - SECTION 17

NONE ISSUED

G. ORDERS AMENDING EXISTING NATURAL GAS IMPORT ORDERS - SECTION 17

<u>APPLICANT</u>	<u>ORDER NUMBER</u>	<u>DATE OF ISSUE</u>	<u>COMMENTS</u>
1. Border Utilities Limited	AO-1-GO-2-66	23/8/73	(1) Amendment in gas purchase contract price

APPENDIX VII

SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, AND ETHANE AS AT 31 DECEMBER 1972

A. NATURAL GAS

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUMES		
			FROM	TO	DAILY (Mcf)	ANNUAL (MMcf)	TERM (MMcf)
1. Union Gas Company of Canada Limited	GLI-1	Ojibway, Ont.	1/2/66	5/11/76	55,000	15,500	170,000
2. Border Utilities Limited	GO-2-66 (AO-1)	Coutts, Alta.	2/6/66	14/9/85	1,000	N/S	N/S
3. Canadian Western Natural Gas Company Limited	GO-6-66 (AO-1)	Coutts, Alta.	22/9/66	14/9/85	1,000	N/S	N/S
4. TransCanada PipeLines	GL-21 (AO-5)(a)	(Sault Ste. Marie and Sarnia, Ont.)	5/11/68	31/10/91	N/S	247,782	6,000,000
5. ICG Transmission Limited	GL-30 (AO-1)(b)	Rainy River, Ont.	1/11/70	31/10/95	36,366	12,144	299,990
6. TransCanada PipeLines Limited	GL-42(a)	(Sault Ste. Marie and Sarnia, Ont.)	15/4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	2,129,232
7. Consolidated Natural Gas	GLI-5 (AO-1)	N/S	15/3/72	31/10/92	150,000	45,000	669,000

(a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(b) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

N/S Not Specified.

APPENDIX VII (CONT'D)

SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, AND ETHANE AS AT 31 DECEMBER 1973

B. PROPANE

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM ANNUAL VOLUMES	
			FROM	TO	COLUMN A (BARRELS)	COLUMN B (BARRELS)
1. Dome Petroleum Limited	GL-31 (AO-3) ^(a)	Sarnia, Ont.	5/6/73 ^(b)	31/12/73	6,287,500	5,827,500
			1/1/74	31/12/74	5,991,500	5,481,500
			1/1/75	31/12/75	5,913,000	5,338,000
			1/1/76	31/12/76	5,751,500	5,121,500
			1/1/77	31/12/77	5,582,500	4,887,500
			1/1/78	31/12/78	5,457,000	839,500
			1/1/79	31/12/79	5,357,000	839,500
			1/1/80	31/12/80	5,263,000	839,500
			1/1/81	31/12/81	5,114,000	839,500
			1/1/82	31/12/82	4,948,500	839,500
			1/1/83	31/12/83	4,665,500	839,500
			1/1/84	31/12/84	4,316,500	839,500
			1/1/85	31/12/85	3,898,000	839,500
			1/1/86	31/12/86	3,362,000	839,500
			1/1/87	31/12/87	2,930,500	906,000
			1/1/88	31/12/88	2,489,000	1,216,000
			1/1/89	31/12/89	2,078,000	1,241,000
			1/1/90	31/12/90	1,690,000	1,065,000
			1/1/91	31/12/91	1,396,000	1,045,000
			1/1/92	31/12/92	1,339,500	1,040,000
			1/1/93	31/12/93	1,233,500	1,025,000
2. Amoco Canada Petroleum Company Ltd.	GL-32 (AO-2) ^(b)	Sarnia, Ont.	1/1/94	31/12/94	1,011,000	655,000
			1/1/95	31/12/95	294,000	0
			5/6/73 ^(b)	31/12/73	3,872,500	3,589,500
			1/1/74	31/12/74	3,579,000	3,274,000
			1/1/75	31/12/75	3,533,000	3,189,000
			1/1/76	31/12/76	3,421,500	3,046,500
			1/1/77	31/12/77	3,287,000	2,878,000
			1/1/78	31/12/78	3,197,500	584,000
			1/1/79	31/12/79	3,133,500	584,000
			1/1/80	31/12/80	3,077,000	584,000
			1/1/81	31/12/81	2,987,500	584,000
			1/1/82	31/12/82	2,943,500	584,000
			1/1/83	31/12/83	2,832,500	584,000
			1/1/84	31/12/84	2,610,000	584,000
			1/1/85	31/12/85	2,401,500	584,000
			1/1/86	31/12/86	2,182,500	584,000
			1/1/87	31/12/87	2,024,000	584,000
			1/1/88	31/12/88	1,838,000	584,000
			1/1/89	31/12/89	1,690,000	584,000
			1/1/90	31/12/90	1,545,000	584,000
			1/1/91	31/12/91	1,396,000	584,000
			1/1/92	31/12/92	1,339,500	584,000
			1/1/93	31/12/93	1,233,500	584,000
			1/1/94	31/12/94	1,011,000	584,000
			1/1/95	31/12/95	294,000	486,400

SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, AND ETHANE AS AT 31 DECEMBER 1973

B. PROPANE (cont'd)

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM ANNUAL VOLUMES	
			FROM	TO	COLUMN A (BARRELS)	COLUMN B (BARRELS)
3. Pan Canadian Gas Products	GL-34 (AO-2) (e)	Sarnia, Ont.	(f)			
			5/6/73	31/12/73	2,415,000	2,238,000
			1/1/74	31/12/74	2,412,500	2,207,500
			1/1/75	31/12/75	2,380,000	2,149,000
			1/1/76	31/12/76	2,330,000	2,075,000
			1/1/77	31/12/77	2,295,500	2,009,500
			1/1/78	31/12/78	2,259,500	401,500
			1/1/79	31/12/79	2,223,500	401,500
			1/1/80	31/12/80	2,186,000	401,500
			1/1/81	31/12/81	2,126,500	401,500
			1/1/82	31/12/82	2,005,000	401,500
			1/1/83	31/12/83	1,833,000	401,500
			1/1/84	31/12/84	1,706,500	401,500
			1/1/85	31/12/85	1,496,500	401,500
			1/1/86	31/12/86	1,179,500	335,000
			1/1/87	31/12/87	906,500	25,000
			1/1/88	31/12/88	651,000	0
4. Dome Petroleum Limited	GL-46(g)	Sarnia, Ont.	1/4/74	31/3/84	3,000,000	30,000,000

(a) This licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-26 with Licence No. GL-31 whereby certain quantities of the propane exported near Greta, Manitoba, is imported into and exported from Canada at Sarnia, Ontario, and exported at Windsor, Ontario. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.

(b) This period includes the volumes of propane exported and imported pursuant to Licences GL-26 and GL-31 during the part of 1973 prior to the date of issue of this order.

(c) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-27 with Licence No. GL-32. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.

(d) This period includes the volumes of propane exported and imported pursuant to Licences GL-27 and GL-32 during the part of 1973 prior to the day of the issue of this order.

(e) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.

(f) This period includes the volumes of propane exported and imported pursuant to Licences GL-33 and GL-34 during the part of 1973 prior to the day of the issue of this order.

(g) This is an import-export licence whereby no propane may be exported at Windsor, Ontario, that has not been imported at Sarnia, Ontario.

APPENDIX VII (CONT'D)

SUBSISTING LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, AND ETHANE AS AT DECEMBER 1973

C. ETHANE

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUMES	
			FROM	TO	ANNUAL (Bbls)	TERM (Bbls)
1. Dome Petroleum Limited	GL-45(a)	Sarnia, Ont.	1/4/74	31/3/84	2,000,000	20,000,000

(a) This licence authorizes an import near Sarnia, Ontario. The quantity of ethane imported under the authority of this licence shall be equal to the quantities of ethane which the Licensee exports near Windsor, Ontario.

IMPORTS OF NATURAL GAS

A. NATURAL GAS

IMPORTER AND LICENCE/ORDER	MAXIMUM		(MMcF)					CUMULATIVE TO 31/12/68	(MMcF)				CUMULATIVE TO 31/12/73	TOTAL AUTHORIZED IMPORTS	REMAINING (a) UNDER LICENCES
	DAILY (McF)	ANNUAL (MMcF)	1969	1970	1971	1972	1973		1969	1970	1971	1972	1973		
1. Coutts Gas Company Limited PC1955-1742	N/S	120	-	-	-	-	-	797	-	-	-	-	797	2,340	N/A
2. Border Utilities Limited GO-2-66 (AO-1)	1,000	N/S	36	35	36	39	33	91	-	-	-	-	270	N/S	N/A
3. Canadian Western Natural Gas Company Limited GO-6-66 (AO-1)	1,000	N/S	76	74	77	87	55	207	-	-	-	-	576	N/S	N/A
4. Union Gas Company of Canada, Limited PC1956-1848	N/S	5,500	-	-	-	-	-	72,563	-	-	-	-	72,563	N/S	N/A
5. Union Gas Company of Canada, Limited GLI-1	55,000	15,500	11,449	10,625	14,236	15,426	14,736	46,001	-	-	-	-	112,473	167,042 ^(b)	54,569
6. TransCanada PipeLines Limited GLI-2 (AO-2)	N/S	25,500	(((((((((((((
01/11/65 - 01/11/66	N/S	30,400	(((((((((((((
01/11/66 - 01/11/67	N/S	15,300	(((((((((((((
01/11/67 - 01/11/68	N/S	10,200	(((((((((((((
01/11/68 - 01/11/69	N/S	5,100	(((((((((((((
01/11/69 - 01/11/70	N/S		(((((((((((((
7. Tecumseh Gas Storage Limited GLI-3	20,000	3,000	5,896	-	-	-	-	5,896	-	-	-	-	5,896	5,896 ^(b)	-

IMPORTS OF NATURAL GAS

A. NATURAL GAS

IMPORTER AND LICENCE/ORDER	MAXIMUM		(MMcf)						CUMULATIVE TO 31/12/73	TOTAL AUTHORIZED IMPORTS	REMAINING (a) UNDER LICENCES
	DAILY (Mcf)	ANNUAL (MMcf)	1969	1970	1971	1972	1973				
8. TransCanada PipeLines Limited GLI-4 (AO-6)	N/S	N/S	18,320	-	-	-	-	79,029	82,303	N/A	
9. Consolidated Natural Gas Limited GLI-5 (AO-1) (e)	150,000	45,000	-	-	-	2,669	28,587	31,256	669,000	637,744	
10. TransCanada PipeLines Limited GL-21 (AO-5) (c)	N/S	247,782	157,207	231,557	223,189	220,480	228,608	1,080,971	6,000,000	4,919,029	
11. ICG Transmission Limited GL-30 (AO-1) (d)	36,366	12,144	-	45	9,100	11,500	10,286	30,931	299,990	269,059	
12. TransCanada PipeLines Limited GL-42 (e)	N/S	8,218	-	-	7,310	-	-	7,310	2,129,232	1,944,182	
15/04/71 - 31/10/71	N/S	92,218	-	-	10,601	82,057	85,082	177,740			
01/11/71 - 31/10/94	N/S	N/S	2	-	-	-	-	2	5	N/A	
13. TransCanada PipeLines Limited EO-2-62	70,000	N/S	199	-	-	-	-	199	1,000	N/A	
14. TransCanada PipeLines Limited EO-1-63	N/S	N/S	55	-	-	-	-	55	55	-	
15. Union Gas Company of Canada, Limited EO-2-63	N/S	N/S	1,083	-	-	-	-	1,083	1,965 (b)	N/A	
16. Union Gas Company of Canada, Limited EO-3-63											

APPENDIX VIII (cont'd)
IMPORTS OF NATURAL GAS

A. NATURAL GAS

IMPORTER AND LICENCE/ORDER	MAXIMUM		(Mmcf)					CUMULATIVE TO 31/12/68	(Mmcf)			CUMULATIVE TO 31/12/73	TOTAL AUTHORIZED IMPORTS	REMAINING UNDER LICENCES
	DAILY (Mcf)	ANNUAL (Mmcf)	1969	1970	1971	1972	1973							
17. TransCanada Pipelines Limited EO-1-64	140,000	N/S	-	-	-	-	-	2,511	-	-	-	2,511	2,500	N/A
18. TransCanada Pipelines Limited EO-2-64 (AO-1)	150,000	N/S	-	-	-	-	-	1,756	-	-	-	1,756	3,450	N/A
19. Union Gas Company of Canada, Limited EO-2-66 (AO-1)	N/S	N/S	-	-	-	-	-	7,861	-	-	-	7,861	7,861 (b)	-
20. Union Gas Company of Canada, Limited EO-1-67	N/S	N/S	-	-	-	-	-	7,861	-	-	-	7,861	7,861 (b)	-
21. TransCanada Pipelines Limited EO-2-67	N/S	N/S	-	-	-	-	-	389	-	-	-	389	500	N/A
22. Westcoast Transmission Company Limited EO-4-70	N/A	N/A	-	1	-	-	-	-	-	-	-	1	N/A	-
23. TransCanada Pipelines Limited EO-1-72	100,000	N/A	-	-	-	121	-	-	-	-	-	121	N/S	N/A
24. TransCanada Pipelines Limited EO-4-72	40,000	N/A	-	-	-	20	-	-	-	-	-	20	40	N/A
Gross Imports			299,897	192,142	242,463	264,549	332,399	367,387	1,698,837					
Deduct Imports for Re-Exports: Item 9, GL-5 (e)			-	-	-	2,669	28,587					31,256		
Deduct Re-Import of Exports: Item 10, GL-21 (c)			19,930	157,207	231,557	223,189	220,480	228,608	1,080,971					
Item 11, GL-30 (d)			-	-	45	9,100	11,500	10,286	30,931					
Item 12, GL-42 (c)			-	-	-	17,911	82,057	85,082	185,050					
Net Imports			279,967	34,935	10,861	14,349	15,693	14,824	370,629					

APPENDIX VIII (cont'd)
IMPORTS OF NATURAL GAS

A. NATURAL GAS

FOOTNOTES:

- | | | |
|-----|---|--|
| (a) | It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes. | |
| (b) | Converted from "wet base" to "dry base" for purpose of comparability. | |
| (c) | This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market. | |
| (d) | This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario. | |
| (e) | The quantities of gas authorized for import by this licence near Loomis, Saskatchewan, are authorized to be exported at Emerson, Manitoba, pursuant to Licence GL-44. | |
| N/S | Not specified | |
| N/A | Not applicable | |

* * *

Districts I-IV	1972		1973	
	Total for Year	Daily Average	Total for Year	Daily Average
Amoco Oil Company	10,713,959	29,273	16,119,288	44,162
Amoco Oil Company	2,865,408	7,829	2,706,762	7,416
Amoco Oil Company	915,580	2,502	390,092	1,069
Amoco Oil Company	380,346	1,039	1,410,242	3,864
Amoco Oil Company	-	-	588,449	1,612
American Petrofina Inc.	204,616	559	1,319,424	3,615
AMPCO Oil Corporation	624,872	1,707	1,339,755	3,671
Ashland Oil & Refining Co.	21,608,404	59,039	22,398,297	61,365
Ashland Oil & Refining Co.	1,298,152	-	3,918,867	10,737
Ashland Oil & Refining Co.	-	-	889,033	2,436
Atlantic Richfield Oil Co.	16,818,180	45,951	19,327,326	52,951
Atlantic Richfield Oil Co.	5,448,479	14,887	7,551,374	20,688
Bay Refining Company	1,792,367	4,897	4,969,954	13,616
Big West Oil Company	4,290,950	11,724	709,839	1,945
Cities Service Oil Co.	679,572	1,857	-	-
Clark Oil & Refining Corporation	6,165,249	16,845	19,024,141	52,121
Continental Oil Company	19,498,427	53,274	14,949,147	40,956
Continental Oil Company	12,363,049	33,779	1,841,778	5,046
Continental Oil Company	1,549,206	4,230	2,292,800	802
Consumers Power Company	6,925,698	18,923	7,295,899	19,989
CRA Inc.	322,604	881	3,380,298	9,261
CRA Inc.	-	-	861,646	2,361
CRA Inc.	526,590	1,439	635,450	1,741
Crystal Refining Company of Carson City Inc.	-	-	146,283	401
Carson City, Michigan	816,145	2,230	607,725	1,665

APPENDIX IX (CONT'D)
EXPORTS OF CANADIAN CRUDE OIL AND EQUIVALENT IN THE UNITED STATES 1972 AND 1973
(Barrels of 35 Canadian Gallons)

Districts I-IV	1972		1973	
	Total for Year	Daily Average	Total for Year	Daily Average
Derby Refining Company	238,691	652	832,509	2,281
Detroit Edison Company	-	-	1,591,500	4,360
Farmers Union Central Exchange Inc.	4,191,204	11,451	4,650,506	12,741
Flank Oil Company	-	-	1,462	4
Gladioux Refining Inc.	454,085	1,241	780,205	2,138
Gulf Oil Corporation	8,621,778	23,556	10,470,748	28,687
Exxon Co., U.S.A.	3,732,987	10,199	4,599,094	12,600
Husky Oil Company	371,933	1,016	1,030,117	2,822
Koch Refining Co.	28,914,536	79,001	31,245,466	85,604
Lake Superior Dist. Power	89,522	245	310,526	851
Lakehead Pipe Line Co. Inc.	207,546	567	257,615	706
Lakeside Refinery Company	-	-	157,105	430
Laketon Asphalt Refining Inc.	770,676	2,106	832,936	2,419
Little America Refining Co.	534,846	1,461	448,829	1,230
Marathon Oil Company	4,793,084	13,096	6,078,340	16,653
Mobil Oil Company	13,915,355	38,020	14,734,686	40,369
Mobil Oil Company	855,554	2,338	166,385	456
Mobil Oil Company	-	-	4,371,415	11,976
Mobil Oil Company	2,426,817	6,631	12,878,080	35,282
Murphy Oil Corporation	11,759,575	32,130	13,284,979	36,397
National Cooperative Refinery Ass.	438,355	1,198	1,279,969	3,507
Osceola Refining Company	1,588,259	4,340	2,010,989	5,510
Phillips Petroleum Co.	1,165,681	3,185	1,601,587	4,388
Refinery Corporation	140,044	384	356,371	976
Rock Island Oil Co.	235,447	643	1,142,767	3,131
Shell Oil Company	2,611,775	7,136	5,806,456	15,908
Skelly Oil Company	627,858	1,715	1,731,465	4,744
Spruce Oil Corporation	-	-	25,571	70
Wichita, Kansas				
River Rouge, Michigan				
Laurel, Montana				
Cheyenne, Wyoming				
Fort Wayne, Indiana				
Toledo, Ohio				
Billings, Montana				
Cheyenne, Wyoming				
Pine Bend, Minnesota				
Ashland, Wisconsin				
Superior, Wisconsin				
Kalamazoo, Michigan				
Laketon, Indiana				
Casper, Wyoming				
Detroit, Michigan				
Buffalo, New York				
Woodhaven, Michigan				
East Chicago, Indiana				
Joliet, Illinois				
Superior, Wisconsin				
McPherson, Kansas				
West Branch, Michigan				
Kansas City, Kansas				
Denver, Colorado				
Rock Island, Indiana				
Wood River, Illinois				
El Dorado, Kansas				
Wolf Point, Montana				

APPENDIX IX (CONT'D)
EXPORTS OF CANADIAN CRUDE OIL AND EQUIVALENT IN THE UNITED STATES 1972 AND 1973
(Barrels of 35 Canadian Gallons)

Districts I-IV	1972		1973	
	Total for Year	Daily Average	Total for Year	Daily Average
Standard Oil Company (Ohio)	18,183,379	49,681	21,521,091	58,962
Standard Oil Company (Ohio)	632,664	1,729	1,171,818	3,210
Sun Oil Company	8,818,509	24,094	11,336,256	31,058
Tesoro Petroleum	-	-	295,231	809
Texaco Incorporated	4,110,264	11,230	9,741,370	26,688
Texaco Incorporated	167,520	458	1,911,326	5,237
Texaco Incorporated	695,778	1,901	-	-
Total Leonard Refineries, Inc.	7,136,844	19,499	7,354,224	20,149
Union Oil Company of California	2,905,278	7,938	6,540,796	17,920
United Refining Company	5,004,053	13,672	8,992,590	24,637
Westco Refining Company	326,681	893	502,298	1,376
Total Districts I-IV	252,473,431	689,818	324,768,547	889,777

APPENDIX IX (CONT'D)
EXPORTS OF CANADIAN CRUDE OIL AND EQUIVALENT IN THE UNITED STATES 1972 AND 1973
(Barrels of 35 Canadian Gallons)

District V	1972		1973	
	Total for Year	Daily Average	Total for Year	Daily Average
Atlantic Richfield Oil Company				
Douglas Oil Company Of California				
Mobil Oil Company				
Shell Oil Company				
Texaco Incorporated				
Cherry Point, Washington	27,358,751	74,751	22,135,213	60,644
Paramount, California	125,202	342	-	-
Ferndale, Washington	20,490,957	55,986	21,118,371	57,859
Anacortes, Washington	27,982,830	76,456	27,214,293	74,560
Anacortes, Washington	21,769,453	59,479	20,222,022	55,403
Total District V	97,727,193	267,014	90,689,899	248,466
Total U.S.A.	350,200,624	956,832	415,458,446	1,138,243

Sources: Company reports to the National Energy Board,
Pipeline company delivery reports and Board
estimates.

Note: The Board is not sure that all companies
reported exports on the same basis during
1972 and in January and February of 1973
which was prior to the introduction of
export controls on crude oil and equivalent.

APPENDIX X

IMPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS 1972 AND 1973 (a)

(Barrels of 35 Canadian Gallons per day)

		ATLANTIC PROVINCES	QUEBEC & E. ONTARIO	CENTRAL & W. ONTARIO	PRAIRIES	B.C.	YUKON & N.W. TERRITORIES	TOTAL
Crude Oil	1973	306,064	550,950	1,354	-	-	-	858,368
	1972	266,261	523,684	1,163	-	-	-	791,107
Motor Gasoline	1973	-	316	4	47	-	-	366
	1972	6	8,054	2	47	-	-	8,109
Middle Distillates	1973	4,957	7,121	1,048	911	1,554	10	15,602
	1972	13,578	19,228	4,347	684	2,667	-	40,504
Heavy Fuels	1973	8,261	40,691	5,970	-	9,644	8	64,574
	1972	9,914	45,431	6,323	-	8,502	13	70,184
Other Products	1973	2,794	11,806	8,168	457	2,406	36	25,668
	1972	2,720	9,111	8,306	221	1,505	43	21,906
Total Products	1973	16,013	59,934	15,190	1,415	13,605	54	106,209
	1972	26,217	81,824	18,979	951	12,675	56	140,702
Crude and Products	1973	322,077	610,884	16,544	1,415	13,605	54	964,578
	1972	292,479	605,508	20,141	951	12,675	56	931,810

APPENDIX X

(a) 1972 revised; 1973 subject to revision.

Source: Company import reports

* * * * *

APPENDIX XI

IMPORTS AND NET TRANSFERS^(a) OF PETROLEUM PRODUCTS INTO CENTRAL AND WESTERN ONTARIO 1967 - 1973

(Barrels of 35 Canadian gallons per day)

	<u>MOTOR GASOLINE</u>	<u>MIDDLE DISTILLATES</u>	<u>TOTAL LIGHT OILS</u>	<u>RESIDUAL FUEL OIL</u>	<u>OTHER PRODUCTS</u>	<u>TOTAL RESID. & OTHER PROD.</u>	<u>TOTAL ALL PRODUCTS</u>
1967	5,276	19,018	24,294	14,726	13,955	28,681	52,975
1968	6,684	24,249	30,933	15,074	14,783	29,857	60,790
1969	8,247	19,708	27,955	17,666	16,626	34,292	62,247
1970	9,495	18,357	27,852	22,922	16,389	39,311	67,163
1971	5,623	12,479	18,102	21,407	9,637	31,044	49,146
1972	8,034	14,852	22,886	25,893	16,176	42,069	64,955
1973 ^(b)	3,773	7,592	11,365	29,985	17,496	47,481	58,846

(a) Reported as transfers from Quebec and Maritime Provinces to central and western Ontario.

(b) Subject to revision.

Source: Company reports to the National Energy Board.

* * * *

APPENDIX XII

PIPELINE LEAKS, BREAKS AND MALFUNCTIONS

The following is a summary of leaks, breaks, malfunctions and other pipeline incidents during the operation of pipelines reported to the Board during 1973 by companies under the jurisdiction of the National Energy Board:

<u>Origin of Reported Incidents</u>	<u>Number of Incidents</u>
Internal and external corrosion of pipe and equipment	11
Defective Mill Welds	1
Defective Field Welds	6
Pipe Material Defects	1
Defective Equipment and Piping	13
Damage during Construction	3
by others	4
Miscellaneous	9
	<hr/>
TOTAL	48
	<hr/>
	<hr/>

NEW LICENCES AND ORDERS TO EXPORT ELECTRIC POWER AND ENERGY DURING 1973

A. NEW LICENCES ISSUED IN 1973 PURSUANT TO SECTION 82

APPLICANT	CLASS	KILOWATTS	ANNUAL KILOWATTHOURS (MILLIONS)	TERM	APPLICATION HEARD	ISSUED	LICENCE NO.
1. Cominco Ltd.	Firm	-	600	1/7/73 to 30/6/75	27/2/73	17/4/73	EL-73
2. Cominco Ltd.	Firm	-	600	1/7/73 to 30/6/74	27/2/73	17/4/73	EL-74
3. Cominco Ltd.	Interruptible	-	1,500	1/7/73 to 30/6/75	27/2/73	17/4/73	EL-75

B. NEW ORDERS ISSUED IN 1973 PURSUANT TO SECTION 6A OF THE REGULATIONS UNDER PART VI OF THE ACT*

APPLICANT	CLASS	KILOWATTS	ANNUAL KILOWATTHOURS (THOUSANDS)	TERM FROM DATE OF ISSUE-MONTHS	ISSUED	ORDER NO.
1. Quebec Hydro-Electric Commission	Firm	20	35	36	5/4/73	ELO-97
2. Quebec Hydro-Electric Commission	Firm	50	130	36	5/4/73	ELO-98
3. Quebec Hydro-Electric Commission	Firm	20	100	36	5/4/73	ELO-99
4. Quebec Hydro-Electric Commission	Firm	20	50	36	5/4/73	ELO-100
5. Quebec Hydro-Electric Commission	Firm	57	95	36	5/4/73	ELO-101
6. Quebec Hydro-Electric Commission	Firm	5	5	36	5/4/73	ELO-102
7. Quebec Hydro-Electric Commission	Firm	2	2	36	5/4/73	ELO-103
8. Quebec Hydro-Electric Commission	Firm	57	149	36	8/11/73	ELO-109
9. The Canadian Transit Company	Firm	100	25	36	24/5/73	ELO-104
10. The New Brunswick Electric	Firm	200	200	36	16/8/73	ELO-105

APPENDIX XIII (CONT'D)

NEW LICENCES AND ORDERS TO EXPORT ELECTRIC POWER AND ENERGY DURING 1973

B. NEW ORDERS ISSUED IN 1973 PURSUANT TO SECTION 6A OF THE REGULATIONS UNDER PART VI OR THE ACT* (cont'd)

APPLICANT	CLASS	KILOWATTS	ANNUAL KILOWATTHOURS (THOUSANDS)	TERM FROM DATE OF ISSUE-MONTHS	ISSUED	ORDER NO.
11. The New Brunswick Electric Power Commission	Firm	12	15	36	16/8/73	ELO-106
12. The New Brunswick Electric Power Commission	Firm	25	10	36	16/8/73	ELO-107
13. British Columbia Hydro and Power Authority	Firm	200	600	36	4/10/73	ELO-108
14. Cedars Rapids Transmission Company	Inter- ruptible	-	20,000	36	15/11/73	ELO-110
15. The Detroit and Windsor Subway Company	Firm	300	1,000	36	29/11/73	ELO-111

* Under Section 6A the Board may by order authorize the exportation of not more than 4,000 kilowatts of electric power and not more than 20,000,000 kilowatthours per year of electrical energy for a term not exceeding three years upon such terms and conditions as the Board may prescribe.

C. EMERGENCY ORDERS ISSUED IN 1973 PURSUANT TO SECTION 19 OF THE REGULATIONS UNDER PART VI OF THE ACT*

APPLICANT	CLASS	TOTAL KILOWATTHOURS (MILLIONS)	TERM	ISSUED	ORDER NO.
1. Cominco Ltd.	Interruptible	250	15/9/73 to 30/4/74	13/9/73	EOE-1-73
2. The Hydro-Electric Power Commission of Ontario	Interruptible	1500	28/9/73 to 31/12/73	27/9/73	EOE-2-73
3. Quebec Hydro-Electric	Interruptible	750	1/1/74 to 30/6/73	24/12/73	EOE-3-73

* Under Section 19 the Board may by order authorize the export of power where, in the opinion of the Board, emergency conditions have arisen that may cause an interruption in the supply of power to consumers served by interconnected system in the U.S.A. or Canada.

NEW LICENCES AND ORDERS TO EXPORT ELECTRIC POWER AND ENERGY DURING 1973

D. REVOKING ORDERS ISSUED IN 1973 PURSUANT TO SECTION 84

APPLICANT	DESCRIPTION	ISSUED	ORDER NO.
1. The Hydro-Electric Power Commission of Ontario	Order to revoke Licence EL-34 dated 16 March 1965	5/4/73	AO-1-EL-34
2. The Manitoba Hydro-Electric Board	Order to revoke Licence EL-55 dated 5 March 1970	5/4/73	RO-1-EL-55

E. AMENDING ORDERS ISSUED IN 1973 RELATIVE TO ELECTRIC POWER EXPORT LICENCES

APPLICANT	ASSOCIATED LICENCE	ISSUED	ORDER NO.
1. Manitoba Hydro-Electric Board	EL-57	5/4/73	AO-1-EL-57
2. British Columbia Hydro and Power Authority	EL-47	17/4/73	AO-1-EL-47
3. British Columbia Hydro and Power Authority	EL-49	17/4/73	AO-1-EL-49
4. British Columbia Hydro and Power Authority	EL-50	17/4/73	AO-1-EL-50
5. Cedars Rapids Transmission Company	EL-44	3/5/73	AO-4-EL-44
6. The Hydro-Electric Power Commission of Ontario	EL-33	24/5/73	AO-1-EL-33
7. British Columbia Hydro and Power Authority	EL-49	4/10/73	AO-2-EL-49
8. British Columbia Hydro and Power Authority	EL-50	4/10/73	AO-2-EL-50
9. Southern Canada Power Company Limited	EL-30	29/11/73	AO-5-EL-30
10. Southern Canada Power Company Limited	EL-31	29/11/73	AO-5-EL-31

APPENDIX XIV

EXPORTS OF ELECTRIC ENERGY - CALENDAR YEAR 1973

THOUSANDS OF KILOWATTHOURS

EXPORTER	LICENCE NUMBER	LICENCE AUTHORIZATION				GROSS ENERGY EXPORTED				REPORTED DOLLAR VALUE OF EXPORT			
		FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE
1. Maine and New Brunswick Electrical Power Company, Limited	EL-22 EL-23	250,000	25,000	130,120	1,244	1,041,609	623						
2. Fraser Companies Limited	EL-60 EL-61	300,000	30,000	284,646	-	2,704,137	-						
3. The New Brunswick Electric Power Commission	EL-67 EL-68 EL-69 EL-70 EL-71 EL-72 EL-51 EL-52 EL-53 ELO-105 to ELO-107	250,000 102,492 100,000 131,400 1,000,000 720,400 235	150,000 163,812 150,000 131,400 1,000,000 720,400 235	217,428 30,768 54,558 912,935 194	38,596 2,603 1,173,890	1,800,459 295,235 (a) 6,475,480 -	296,896 16,600 7,825,403 8,594						
SUB-TOTAL NEW BRUNSWICK				1,630,649	1,216,333	12,316,920	8,146,116						
4. Cedars Rapids Transmission Company Limited	AO-4-EL-44		500,000		354,665		1,949,634						
5. Quebec Hydro-Electric Commission	ELO-97 to 103 & 109	566		326		4,124							
6. Southern Canada Power Company Limited	AO-5-EL-30 AO-5-EL-31	13,000	74,250	12,341	53,548	16,242	401,613						
SUB-TOTAL QUEBEC				12,667	408,213	20,366	2,351,247						

APPENDIX XIV (CONT'D)

EXPORTS OF ELECTRIC ENERGY - CALENDAR YEAR 1973

THOUSANDS OF KILOWATTHOURS

EXPORTER	LICENCE NUMBER	LICENCE AUTHORIZATION		GROSS ENERGY EXPORTED		REPORTED DOLLAR VALUE OF EXPORT	
		FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE	FIRM	INTERRUPTIBLE
						\$	\$
7. The Hydro-Electric Power Commission of Ontario	EL-32	15,000		956		1,912	
	EL-33		7,500,000		5,283,003		47,575,292
	EOE-2-73		1,500,000		1,500,000		19,278,833
	ELO-96	10				30	
8. Canadian Niagara Power Company Limited	EL-58	307,000		259,273		122,406	
	EL-59		160,000		67,930		319,269
9. The Ontario-Minnesota Pulp and Paper Company, Limited	EL-62	232,100		179,013		1,692,454	
	EL-63		87,600				
10. The Detroit and Windsor Subway Company	ELO-93	1,000		820		-	
11. The Canadian Transit Company	ELO-104	25		24		-	
SUB-TOTAL ONTARIO				440,086		1,816,802	67,173,394
12. Manitoba Hydro	EL-56	339,000		226,573		1,863,530	
	EL-57		1,000,000		771,654	163	5,631,195
	ELO-94	15					
SUB-TOTAL MANITOBA				226,581		1,863,693	5,631,195
13. British Columbia Hydro and Power Authority	EL-46	10,000		8,306		108,284	
	EL-47	1,000,000		359,007		(a)	
	EL-49	1,265,000		236,000		1,592,160	
	EL-50		4,000,000		3,242,861		9,836,816
	ELO-92	600		174		13,643	
14. Cominco Ltd.	EL-20		500,000		1,420		
	EL-73	600,000		23,423			
	EL-74	600,000		165,650		707,801	
	EL-75		1,500,000		1,246,058		3,342,277
EOE-1-3			250,000		38,431		133,352
15. West Kootenay Power and Light Company Limited	ELO-95	50		41		826	
SUB-TOTAL BRITISH COLUMBIA				792,601		2,422,714	13,312,445
TOTAL CANADA				3,102,584		13,775,903	96,614,397

*Less than 500 kilowatthours

TOTAL CANADIAN ELECTRIC ENERGY SUPPLY AND TRADE WITH THE UNITED STATES - CALENDAR YEAR 1972

(MILLIONS OF KILOWATTHOURS)

Electric Energy Generation for all Canada	-	262,139 (preliminary)
Electric Energy Importation from U.S.A.	-	2,162 "
Total Canadian Electric Energy Supply	-	264,301 "
Electric Energy Export (Gross) to U.S.A.		3,103 (firm) - 1.2% Canadian Supply
		13,776 (interruptible) - 5.2% of Canadian Supply

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APPENDIX XVI
LICENCED EXPORTS OF PROPANE - 1973

(Volume in barrels)

EXPORTER	LICENCE/ORDER	GROSS EXPORTS		NET EXPORTS	
		AUTHORIZED (b)	(A) ACTUAL	AUTHORIZED (b)	(B) ACTUAL
1. Dome Petroleum Limited	GL-31 (AQ-3) (a) (GL-26)	6,287,500	3,258,254	5,827,500	1,656,458
2. Amoco Canada Petroleum Company Ltd.	GL-32 (AQ-2) (a) (GL-27)	3,872,500	3,470,727	3,589,500	1,849,375
3. PanCanadian Gas Products Ltd.	GL-34 (AQ-2) (a) (GL-33)	2,415,000	1,685,567	2,238,000	813,280
4. Amoco Canada Petroleum Company Ltd.	GO-1-73 (a)	365,000	-	365,000	-

(a) This is an export-import licence which allows the exportation of propane near Gretna, Manitoba and which allows the re-importation near Sarnia, Ontario of all or part of the propane exported near Gretna, Manitoba, and which allows the exportation of propane from Canada near Sarnia, Ontario and near Windsor, Ontario.

(b) See Appendix VII

(c) Licence No. GL-26 was revoked and combined under Licence No. GL-31 in 1973.

(d) Licence No. GL-27 was revoked and combined under Licence No. GL-32 in 1973.

(e) Licence No. GL-33 was revoked and combined under Licence No. GL-34 in 1973.

* * *

APPENDIX XVII
LICENCED IMPORTS OF PROPANE - 1973

(Volume in barrels)

IMPORTER	LICENCE/ORDER	IMPORTS	
		AUTHORIZED (b)	ACTUAL
1. Dome Petroleum Limited	GL-31 (AQ-3) (a) (GL-26)	6,287,500	2,881,181
2. Amoco Canada Petroleum Company Ltd.	GL-32 (AQ-2) (a) (GL-27)	3,872,500	3,056,443
3. PanCanadian Gas Products Ltd.	GL-34 (AQ-2) (a) (GL-33)	2,415,000	1,540,770
4. Amoco Canada Petroleum Company Ltd.	GO-1-73 (a)	365,000	-

(a) This is an export-import licence which allows the exportation of propane near Gretna, Manitoba and which allows the re-importation near Sarnia, Ontario of all or part of the propane exported near Gretna, Manitoba.

(b) See Appendix VII

(c) Licence No. GL-26 was revoked and combined under Licence No. GL-31 in 1973.

(d) Licence No. GL-27 was revoked and combined under Licence No. GL-32 in 1973.

(e) Licence No. GL-33 was revoked and combined under Licence No. GL-34 in 1973.

* * *

APPENDIX XVIII

MONTHLY EXPORT ORDERS OF PROPANE-1973

(volume in barrels)

EXPORTER OF PROPANE	U.S. DISTRICT V			U.S. DISTRICT I TO IV			OTHER			TOTAL AUTHORIZED EXPORTS
	1			2			3			
	OCT. 15 to 31	NOV.	DEC.	OCT. 15 to 31	NOV.	DEC.	OCT. 15 to 31	NOV.	DEC.	
Amoco Canada Petroleum Co. Ltd	10,139	30,509	30,074	141,146	228,731	233,528				674,127
Canadian Propane Gas & Oil Ltd.	7,287	11,230	10,545	13,147	38,089	37,157		303*	31*	117,789
Canadian Superior Oil Ltd.	6,504	17,852	18,596	39,605	71,911	66,773			750*	221,991
Canmore Mines Ltd.	-	-	10,490	-	-	4,496				14,986
Chevron Standard Limited	47,761	111,308	150,715	58,500	81,923	53,550				503,757
Consolidated Natural Gas Limited	-	-	-	-	-	6,769				6,769
C.M. Dining (Canada) Ltd. (Net)	-	-	-	500	2,027	(101)				2,426
Dome Petroleum Limited	-	31,225	25,382	112,178	208,081	176,670				553,536
Elgin Petroleum Limited	-	2,249	5,144	5,789	8,943	5,956				28,081
Federated Cooperatives Ltd	-	-	-	1,450	2,900	-				4,350
Gasbec. Inc.	-	-	-	4,000	8,100	4,800				16,900
Gavan & Kirkpatrick Petroleum Ltd.	3,628	3,798	3,792	2,887	3,762	2,887				20,754
Goliad Oil & Gas Co.	23,082	36,793	60,799	7,032	26,205	13,472				167,383
Gulf Oil Canada Ltd.	-	-	-	7,891	16,736	27,897	269,709**270,834**270,559			863,626
Hidrogas Ltd.	2,904	15,000	17,073	39,106	122,947	129,174				326,204
Home Oil Co. Ltd.	29,934	51,559	74,470	21,220	42,220	56,749				272,648
Hudson's Bay Oil & Gas Co. Ltd.	24,650	36,932	31,549	11,473	20,220	24,845				149,669
Imperial Oil Ltd.	9,000	17,250	20,250	77,250	160,500	189,750				474,000
Irving Oil Company	-	-	-	323	319	318				960
Koch Oil Co.	-	2,999	5,928	31,451	51,501	55,323				147,202
Mobil Canada Ltd.	-	-	-	-	12,729	7,500				20,229
N.G.L. Supply Ltd.	2,874	5,877	11,192	19,433	49,254	44,831				133,461
Northern Petro Products Ltd.	2,174	10,542	9,098	6,083	31,168	19,666				78,731
Northwest L.P.G. Supply Ltd.	-	-	-	3,581	6,286	2,540				12,407
Pacific Petroleum Ltd.	24,185	51,210	45,073	59,953	138,523	217,523	-	3,740*	3,003*	543,640
Quebec Propane	-	-	-	14,250	29,500	37,200				80,950
Real Marketing Ltd.	-	-	1,486	-	-	756				3,004
Shell Oil Canada Ltd.	-	-	-	16,568	27,703	11,291				55,562
Sun Oil Company Ltd.	-	-	-	-	-	7,415				7,415
Superior Propane Ltd.	-	-	-	-	-	26				33
Turner Products Limited	-	-	-	-	-	714				714
Union Oil Co. of Can. Ltd.	1,458	2,273	3,026	27,580	42,192	40,830				117,359
Union Texas of Canada Ltd.	-	-	-	-	-	1,479				1,479
TOTAL EXPORTS	191,580	439,368	534,682	722,396	1,432,973	1,482,214	269,709	274,877	274,343	5,622,142

Other Exports * Alaska
** Japan

APPENDIX XIX

MONTHLY EXPORT ORDERS OF BUTANES-1972

(volume in barrels)

EXPORTER OF BUTANES	U.S. DISTRICT V ¹		U.S. DISTRICT I TO IV ²		TOTAL AUTHORIZED EXPORTS
	OCT. 15 TO 31	NOV.	OCT. 15 TO 31	NOV.	
Amoco Canada Petroleum Co. Ltd.	-	-	64,539	111,101	271,118
Canadian Superior Oil Ltd.	-	2,285	37,458	97,018	203,482
Chevron Standard Limited	-	16,500	752	-	35,215
Cigas Products Ltd.	-	768	-	-	7,196
Dome Petroleum Limited	-	-	35,275	66,301	170,152
Goliad Oil & Gas Co.	-	-	5,960	28,135	55,881
Gulf Oil Canada Ltd.	-	-	9,537	9,764	19,301
Hidrogas Ltd.	-	-	3,774	12,214	29,743
Home Oil Co. Ltd.	2,486	5,249	57,561	16,939	97,071
Hudson's Bay Oil & Gas Co.	-	-	98,820	186,875	459,593
Husky Oil Operation Ltd.	-	-	14,285	29,342	83,024
Koch Oil Co.	-	-	109,500	115,308	346,048
Mobil Canada Ltd.	47,194	68,477	12,476	28,034	266,266
Murphy Oil Company Ltd.	-	-	745	2,309	5,365
N.G.L. Supply Ltd.	-	-	15,014	28,346	67,010
Northern Petro Products Ltd.	1,510	-	2,989	23,650	9,139
Northwest L.P.G. Supply Ltd.	-	2,320	5,849	1,549	16,415
Pacific Petroleum Ltd.	-	9,098	56,568	120,869	302,305
PanCanadian Gas Products Ltd.	-	-	9,617	21,413	45,945
Real Marketing Ltd.	-	-	5,992	3,072	13,643
Shell Oil Canada Ltd.	91,136	243,037	12,151	31,193	636,851
Tenneco Oil and Minerals Ltd.	-	226,394	6,684	4,954	17,356
Texaco Exploration Canada Ltd.	30,979	43,181	-	-	122,590
TOTAL EXPORTS	173,305	392,438	565,546	898,687	3,280,709
		397,210		853,514	

APPENDIX XX

MOTOR GASOLINE, MIDDLE DISTILLATES AND RESIDUAL
FUEL OIL EXPORT APPLICATIONS AND DISPOSITIONS (BBLs)

<u>PRODUCT</u>	<u>APPROVED</u>		<u>DENIED</u>		<u>TOTAL</u>	
	<u>NO.</u>	<u>VOL.</u>	<u>NO.</u>	<u>VOL.</u>	<u>NO.</u>	<u>VOL.</u>
Motor Gasoline	110	2,509,842	32	1,882,113	142	4,391,955
Middle Distillates	173	3,948,560	43	3,053,067	216	7,001,627
Residual Fuel Oil	<u>133</u>	<u>9,151,500</u>	<u>28</u>	<u>1,640,571</u>	<u>161</u>	<u>10,792,071</u>
TOTAL	416	15,609,902	103	6,575,751	519	22,185,653
Percent		70.3		29.7		100.0

**MOTOR GASOLINE, MIDDLE DISTILLATES AND RESIDUAL
FUEL OIL EXPORT APPROVALS (MB)**

CATEGORY	CARGOS	BORDER ACCOMDTN	REGIONAL SURPLUS	CANADIAN ENTERPRISE	RE-EXPORT	CONTAINMENT	OTHER *	TOTAL
Motor Gasoline Per cent	350.0 14.0	21.7 0.8	1609.1 64.0			529.0 21.0		2509.8 100.0
Middle-distillates Per cent	242.0 6.1	423.8 10.7	1835.7 46.5	315.7 8.0	755.0 19.0	188.0 4.8	188.1 4.8	3948.6 100.0
Residual fuel oil Per cent	994.0 10.9	-	885.7 9.7	405.0 4.4	4647.0 50.7	1400.0 15.3	820.0 9.0	9151.5 100.0
GRAND TOTAL Per cent	1586.0 10.2	445.5 2.9	4330.5 27.7	720.7 4.6	5402.0 34.6	2117.0 13.6	1008.1 6.5	15609.9 100.0

* Other includes: Pipeline fill; Lab testing; Off-specification, Import replacement.

APPENDIX XXII

LICENSED EXPORTS OF CRUDE OIL AND CONDENSATE FOR DELIVERY IN THE U.S.A.

EXPORTER	LICENCE NUMBER	MONTH	BARRELS	
			CRUDE OIL	CONDENSATE
Amoco Canada Petroleum Company Ltd.	OL-1-73	March	2,057,470	155,000
	OL-25-73	April	2,176,170	300,000
	OL-48-73	May	1,803,208	310,000
	OL-93-73	June	1,574,790	300,000
	OL-101-73	July	986,666	310,000
	OL-125-73	July	246,636	-
	OL-124-73	August	1,112,559	310,000
	OL-150-73	August	258,726	-
	OL-154-73	September	1,084,590	300,000
	OL-178-73	September	448,290	-
	OL-182-73	October	1,390,040	169,942
	OL-206-73	October	1,077,690	179,760
	OL-227-73	November	84,630	-
	OL-234-73	November	111,383	211,296
	OL-256-73	December	1,012,708	-
			<u>15,425,496</u>	<u>2,545,998</u>
Ashland Oil Canada Limited	OL-2-73	March	3,774,188	356,500
	OL-26-73	April	3,654,000	345,000
	OL-49-73	May	3,307,762	387,500
	OL-94-73	May	3,137,520	405,000
	OL-102-73	June	3,242,104	418,500
	OL-128-73	July	3,242,104	449,500
	OL-156-73	August	3,137,520	435,000
	OL-183-73	September	3,863,747	317,316
	OL-207-73	October	3,230,970	335,640
	OL-235-73	November	3,124,707	394,568
		December	<u>33,714,622</u>	<u>3,844,524</u>
Canada-Cities Service Ltd.	OL-92-73	June	288,000	-
	OL-106-73	July	297,600	-
	OL-132-73	August	297,600	-
	OL-160-73	September	<u>288,000</u>	-
			<u>1,171,200</u>	

LICENSED EXPORTS OF CRUDE OIL AND CONDENSATE FOR DELIVERY IN THE U.S.A.

EXPORTER	LICENCE NUMBER	MONTH	CRUDE OIL	CONDENSATE
Canadian Propane Gas Oil Ltd.	OL-8-73 OL-44-73 OL-67-73 OL-89-73 OL-104-73 OL-130-73 OL-155-73 OL-158-73 OL-185-73 SL-1-OL-185-73 OL-209-73 SL-1-OL-209-73 OL-237-73 SL-1-OL-237-73	March	21,700	-
		April	21,000	-
		May	21,700	-
		June	21,000	-
		July	21,700	-
		August	21,700	-
		September	9,300	-
		October	30,000	-
		November	26,319	-
		December	6,300	-
		January	21,000	-
		February	10,500	-
		March	18,600	-
		April	14,000	-
		May	264,819	-
		June		
Chevron Standard Ltd.	OL-3-73 OL-27-73 OL-50-73 OL-95-73 OL-105-73 OL-131-73 OL-159-73 OL-186-73 OL-210-73 OL-238-73	March	-	110,050
		April	-	106,500
		May	-	110,050
		June	-	26,000
		July	-	108,500
		August	-	108,500
		September	-	75,000
		October	-	53,227
		November	-	56,280
		December	-	66,154
		January	-	890,261
		February	-	
Clark Oil & Refining Corp.	OL-4-73 OL-28-73 OL-51-73 OL-73-73 OL-107-73 OL-133-73 OL-161-73 OL-187-73 OL-211-73 OL-239-73	March	1,240,000	403,000
		April	1,350,000	390,000
		May	1,240,000	341,000
		June	1,341,000	330,000
		July	1,395,000	341,000
		August	1,395,000	341,000
		September	1,350,900	330,000
		October	1,214,983	211,699
		November	1,016,000	223,950
		December	982,576	263,252
		January	12,525,739	3,174,901
		February		
Dome Petroleum Ltd.	OL-90-73 OL-108-73 OL-134-73 OL-162-73 OL-188-73 OL-212-73 OL-240-73 OL-258-73	June	86,400	-
		July	-	31,620
		August	-	62,310
		September	-	75,000
		October	-	138,880
		November	85,200	97,500
		December	60,450	455,700
		January	232,050	170,500
		February		1,031,510

LICENSED EXPORTS OF CRUDE OIL AND CONDENSATE FOR DELIVERY IN THE U.S.A.

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APPENDIX XXII (cont'd)

EXPORTER	LICENCE NUMBER	MONTH	BARRELS	
			CRUDE OIL	CONDENSATE
Gibson Petroleum Company Limited	OL-5-73	March	375,100	62,000
	OL-7-73	March	4,650	-
	OL-29-73	April	381,000	60,000
	OL-30-73	April	4,500	-
	OL-52-73	May	377,921	62,000
	OL-53-73	May	4,650	-
	OL-74-73	June	417,270	90,000
	OL-75-73	June	4,500	-
	OL-97-73	June	7,674	-
	OL-109-73	July	491,226	93,000
	OL-110-73	July	4,650	-
	OL-135-73	August	427,242	93,000
	OL-136-73	August	4,650	-
	OL-152-73	August	-	250
	OL-163-73	September	423,360	90,000
	OL-164-73	September	4,500	-
	OL-204-73	September	-	400
	OL-189-73	October	415,338	37,479
	OL-190-73	October	2,325	-
	OL-213-73	November	334,710	39,690
	OL-214-73	November	3,000	-
	OL-241-73	December	329,530	46,655
	OL-242-73	December	3,100	-
			<u>4,020,896</u>	<u>674,474</u>
Gulf Oil Canada Limited	OL-20-73	March	1,244,154	226,300
	OL-43-73	April	1,454,070	219,000
	OL-66-73	May	1,166,127	226,300
	OL-88-73	June	971,940	180,000
	OL-111-73	July	1,088,503	155,000
	OL-137-73	August	1,090,580	185,000
	OL-165-73	September	1,087,890	180,000
	OL-191-73	October	1,461,216	74,524
	OL-215-73	November	1,207,320	78,870
	OL-243-73	December	1,154,750	100,378
			<u>11,926,550</u>	<u>1,626,372</u>
Hudson's Bay Oil and Gas Company Limited	OL-6-73	March	2,276,144	1,068,880
	OL-31-73	April	2,374,170	840,000
	OL-54-73	May	948,259	12,400
	OL-70-73	May	1,239,535	905,200
	OL-76-73	June	2,127,720	1,040,100
	OL-112-73	July	973,493	12,400
	OL-126-73	July	1,119,100	1,100,500
	OL-138-73	August	1,037,384	12,400
	OL-151-73	August	1,137,700	1,111,350

LICENSED EXPORTS OF CRUDE OIL AND CONDENSATE FOR DELIVERY IN THE U.S.A.

EXPORTER	LICENCE NUMBER	MONTH	CRUDE OIL	BARRELS	CONDENSATE
Hudson's Bay Oil and Gas Company Limited (Continued)	OL-166-73	September	578,820		849,000
	OL-179-73	September	1,102,800		-
	OL-181-73	September	423,930		-
	OL-192-73	October	1,298,807		761,825
	OL-205-73	October	1,284,361		-
	OL-216-73	November	1,064,730		804,780
	OL-228-73	November	1,074,030		-
	OL-244-73	December	2,069,839		12,400
	OL-268-73	December	-		931,860
			22,130,822		9,463,095
Husky Oil Operations Ltd.	OL-9-73	March	466,550		-
	OL-32-73	April	178,500		-
	OL-55-73	May	378,076		-
	OL-77-73	June	348,150		-
	OL-113-73	July	294,872		-
	OL-127-73	July	87,513		-
	OL-139-73	August	441,595		-
	OL-167-73	September	295,500		-
	OL-180-73	September	109,830		-
	OL-193-73	October	340,225		-
	OL-217-73	November	299,730		-
	OL-245-73	December	234,453		-
	OL-255-73	December	65,348		-
Imperial Oil Limited			3,540,342		-
	OL-10-73	March	7,067,876		272,800
	OL-33-73	April	7,600,140		186,000
	OL-56-73	May	6,797,556		58,900
	OL-78-73	June	5,864,760		57,000
	OL-114-73	July	5,935,911		58,900
	OL-140-73	August	6,025,997		105,400
	OL-168-73	September	6,100,110		273,000
	OL-194-73	October	6,803,322		285,944
	OL-218-73	November	5,836,740		302,460
	OL-246-73	December	3,845,550		355,539
	OL-260-73	December	1,841,586		-
			63,719,548		1,955,943
Interprovincial Pipe Line Ltd.	OL-11-73	March	24,800		-
	OL-34-73	April	22,500		-
	OL-57-73	May	20,150		-
	OL-79-73	June	19,500		-
	OL-115-73	July	26,970		-
	OL-141-73	August	21,700		-
	OL-169-73	September	14,700		-
	OL-195-73	October	26,350		-
	OL-219-73	November	29,250		-
	OL-247-73	December	27,900		-

LICENSED EXPORTS OF CRUDE OIL AND CONDENSATE FOR DELIVERY IN THE U.S.A.

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APPENDIX XXII (cont'd)

EXPORTER	LICENCE NUMBER	MONTH	BARRELS	
			CRUDE OIL	CONDENSATE
Koch Oil Co. Ltd.	OL-12-73	March	2,772,423	285,200
	OL-15-73	April	2,624,280	210,000
	OL-58-73	May	2,490,540	186,000
	OL-71-73	May	21,886	-
	OL-153-73	May	27,030	-
	OL-80-73	June	2,743,860	165,000
	OL-116-73	July	2,849,303	170,500
	OL-142-73	August	2,861,207	170,500
	OL-170-73	September	2,768,910	165,000
	OL-196-73	October	3,205,741	111,414
	OL-220-73	November	2,740,980	117,840
	OL-248-73	December	2,657,413	130,820
			<u>27,772,573</u>	<u>1,712,274</u>
Mobil Oil Canada Ltd.	OL-13-73	March	4,796,816	114,700
	OL-23-73	March	40,000	-
	OL-36-73	April	5,116,200	207,000
	OL-59-73	May	4,448,345	182,900
	OL-81-73	June	3,871,080	225,000
	OL-117-73	June	3,359,284	248,000
	OL-143-73	July	3,702,361	263,500
	OL-171-73	August	3,875,640	253,000
	OL-197-73	September	3,593,923	118,699
	OL-221-73	October	3,050,760	201,540
	OL-249-73	November	-	59,923
	OL-257-73	December	3,053,438	123,721
			<u>38,007,847</u>	<u>1,999,983</u>
Murphy Oil Company Ltd.	OL-19-73	March	1,205,156	93,000
	OL-42-73	April	1,137,000	114,000
	OL-65-73	May	1,197,189	89,000
	OL-87-73	June	1,163,100	90,000
	OL-118-73	July	1,202,180	93,000
	OL-144-73	August	1,210,550	93,000
	OL-172-73	September	1,176,110	30,000
	OL-198-73	October	1,276,611	36,053
	SL-1-OL-198-73	October	13,950	-
	OL-222-73	November	1,120,440	38,160
	OL-222-73	November	23,340	-
	SL-1-OL-222-73	November	1,095,323	44,857
	OL-250-73	December	<u>11,827,049</u>	<u>721,970</u>
Shell Canada Ltd.	OL-14-73	March	2,286,994	170,996
	OL-100-73	March	269,328	-
	OL-37-73	April	2,178,000	150,000
	OL-47-73	May	223,754	-
	OL-60-73	May	2,315,549	124,000
	OL-82-73	June	2,011,080	120,000

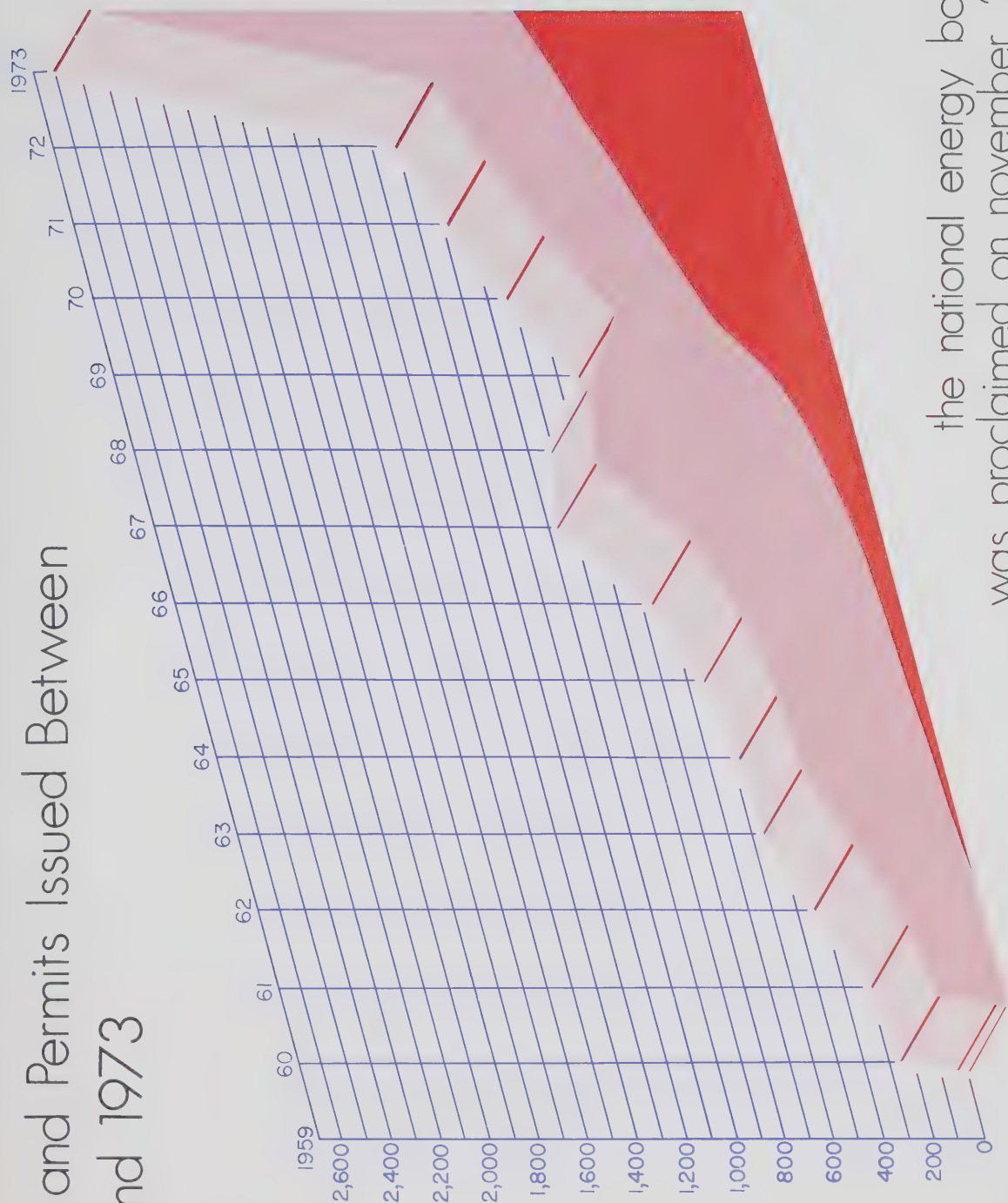
APPENDIX XXII (CONT'D)
LICENSED EXPORTS OF CRUDE OIL AND CONDENSATE FOR DELIVERY IN THE U.S.A.

<u>EXPORTER</u>	<u>LICENCE NUMBER</u>	<u>MONTH</u>	<u>CRUDE OIL BARRELS</u>	<u>CONDENSATE</u>
Shell Canada Ltd. (Continued)	OL-119-73	July	2,141,232	124,000
	OL-145-73	August	2,183,950	124,000
	OL-173-73	September	2,098,080	120,000
	OL-199-73	October	2,253,421	188,790
	OL-223-73	November	1,941,390	175,650
	OL-251-73	December	1,978,255	167,400
			<u>21,881,043</u>	<u>1,464,836</u>
Sun Oil Company Ltd.	OL-15-73	March	910,377	-
	OL-38-73	April	1,020,000	-
	OL-61-73	May	987,691	-
	OL-83-73	June	901,080	-
	OL-120-73	July	627,254	-
	OL-146-73	August	741,117	-
	OL-174-73	September	895,170	-
	OL-200-73	October	845,866	228,532
	OL-224-73	November	740,760	241,740
	OL-252-73	December	732,685	-
	OL-259-73	December	-	<u>113,646</u>
			<u>8,402,000</u>	<u>583,918</u>
Tenneco Oil & Minerals Ltd.	OL-16-73	March	377,952	-
	OL-39-73	April	365,760	-
	OL-62-73	May	331,235	-
	OL-84-73	June	289,290	-
	OL-121-73	July	213,404	-
	OL-147-73	August	251,906	-
	OL-175-73	September	281,580	-
			<u>2,111,127</u>	<u>-</u>
	OL-17-73	March	3,288,170	-
	OL-40-73	April	3,268,050	-
Texaco Exploration Canada Ltd.	OL-63-73	May	2,396,579	-
	OL-85-73	June	2,741,100	-
	OL-122-73	July	2,588,097	-
	OL-148-73	August	2,759,372	-
	OL-176-73	September	2,789,070	-
	OL-201-73	October	2,181,005	-
	OL-225-73	November	1,866,030	-
	OL-253-73	December	1,842,547	-
			<u>25,720,020</u>	<u>-</u>

APPENDIX XXII (CONT'D)
LICENSED EXPORTS OF CRUDE OIL AND CONDENSATE FOR DELIVERY IN THE U.S.A.

<u>EXPORTER</u>	<u>LICENCE NUMBER</u>	<u>MONTH</u>	<u>BARRELS</u>	
			<u>CRUDE OIL</u>	<u>CONDENSATE</u>
Union Oil Company of Canada	OL-18-73	March	704,754	71,300
	OL-41-73	April	752,700	84,000
	OL-64-73	May	618,016	86,800
	OL-86-73	June	540,000	60,000
	OL-123-73	July	399,125	102,300
	OL-149-73	August	470,673	77,500
	OL-177-73	September	525,690	75,000
	OL-202-73	October	435,736	53,444
	OL-226-73	November	364,620	56,550
	OL-254-73	December	352,749	66,464
			<u>5,164,063</u>	<u>733,358</u>
TOTAL LICENCES ISSUED IN 1973			<u>310,692,526</u>	<u>32,423,417</u>

Total Number of Board Certificates, Licences, Orders and Permits Issued Between 1959 and 1973



the national energy board act
was proclaimed on november 2, 1959.

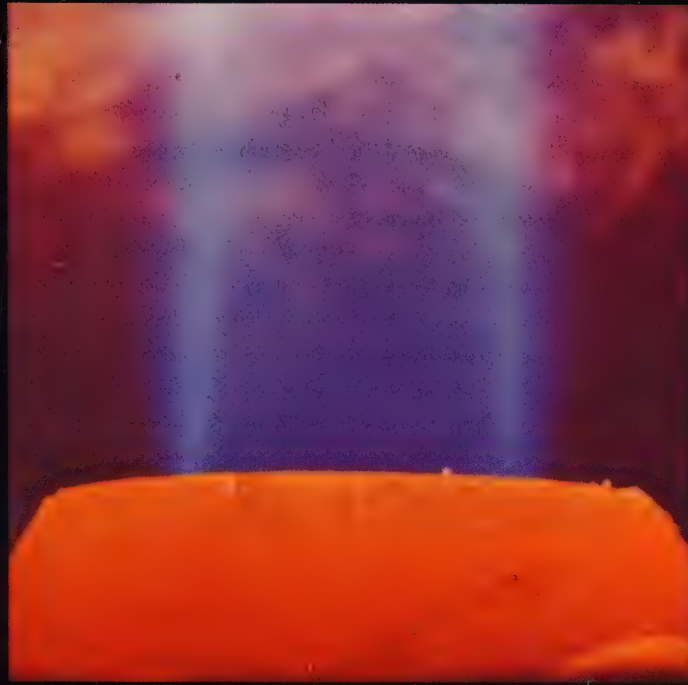
1974
Annual Report

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Canada

National
Energy Board





27 March 1975

*The Honourable Donald S. Macdonald, P.C.,
Minister of Energy, Mines and Resources,
Ottawa, Ontario*

Dear Sir:

In accordance with the provisions of Section 91 of the National Energy Board Act, the Revised Statutes of Canada, 1970, chapter N-6, I have the pleasure to submit the Annual Report of the National Energy Board for the year ended 31 December, 1974.

Yours faithfully,

A handwritten signature in dark ink, appearing to read "Macdonald", is written over the typed name "Marshall A. Crowe".

Marshall A. Crowe,
Chairman.

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The Functions and Responsibilities of the National Energy Board

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal roles; to regulate specific areas of the oil, gas and electrical industries in the public interest, and to advise the Government on all matters concerned with the development and use of energy resources.

In connection with its advisory role, the Board on its own initiative may hold inquiries into a particular aspect of the energy industry and prepare a report for the information of the Minister and of the general public. Recent examples were the inquiry and subsequent report dated July 1974, into the pricing of natural gas being exported under existing licences, and the inquiry into the supply, deliverability and demand for Canadian natural gas which commenced in November.

The Board also carries out studies and prepares reports at the request of the Minister. The Board's inquiry and recommendations in regard to the exportation of oil, published in October 1974, resulted from a request by the Minister.

The Act requires the Board to regulate many aspects of the energy industries to ensure that the interests of the public are protected. The regulatory role of the Board encompasses the following fields:

The issuance of certificates of public convenience and necessity for inter-provincial and international pipelines and international power lines.

Only federally incorporated companies may be granted a certificate to construct or operate interprovincial and international pipelines. Before permission is granted for construction, through a certificate of public convenience and necessity, the Board considers the application at a public hearing. The Board may, however, issue orders for relatively minor additions or modifications to pipeline systems or transmission lines without calling a public hearing. These would include sections, branches and extensions of pipeline not more than 25 miles in length, and ancillary installations such as tanks, pumps, compressors, meter stations, and communications systems, as well as international power lines of maximum transfer capacity of 5,000 kilowatts.

Pipeline Utility Crossings.

For reasons of safety, the protection of the environment and other utilities' services, no pipeline may cross or be crossed by another utility without authorization of the Board. Authorization is made by Board order, without a public hearing, after consideration of all the relevant information.

Safety Regulations.

Pipeline safety is an important aspect of the Board's responsibilities, and high standards are maintained through regulations and orders, and regular on-site inspections by Board staff.

Regulation of Pipeline Tolls, Tariffs, Accounting Practices.

The regulation of rates, tolls, and tariffs of pipeline companies under federal jurisdiction is carried out by the Board, and the establishment of fair and reasonable rates may involve public hearings. The Board, in approving or setting rates or charges for the transportation of oil and gas in a pipeline, seeks to ensure that there is no unjust discrimination against any person or locality. The rates, tolls, or tariffs allowed also take into consideration the capital and operating costs of the pipeline company, and the necessity for it to earn an adequate return on its investment so as to be able to attract capital as needed to maintain and extend service.

To enable the Board to reach reasonable decisions, it is essential that financial information provided by all companies be complete and in a form permitting full evaluation and comparison. This is accomplished by requiring oil and gas pipeline companies under the Board's jurisdiction to use uniform accounting classifications and practices established by the Board. Their records are checked periodically by Board examiners to ensure compliance with the Board's requirements.

The issuance of licences and orders authorizing the export of oil, gas and electric power and the import of gas.

In considering applications for export licences, the Board is required by the National Energy Board Act to satisfy itself, among other things, that the quantities of energy involved do not exceed the surplus remaining after allowance has been made for reasonably foreseeable Canadian requirements. The Board must also be satisfied that the prices charged for exports are just and reasonable in relation to the public interest.

Implementation of Board Decisions.

When the Board is prepared to grant a pipeline or power line certificate or to issue a licence for the export of gas or electricity, it so reports to the Governor in Council through the Minister of Energy, Mines and Resources. The cabinet may accept or reject the Board's report. If the Board's report is concurred in by the Governor in Council, the certificate is issued by the Board or the licence, having previously been issued by the Board, comes into effect. In cases where the Board refuses an application, the decision is not subject to review by the Governor in Council. Following public hearings on these matters, Board reports are issued as public documents.

Because of the different nature of the trade in crude oil and petroleum products — specifically the use of short term contracts and the need to make decisions on a daily basis — oil export controls are implemented directly by the Board without reference to the Governor in Council.

Applications for orders authorizing the export of propane and butane are also dealt with by the Board without reference to the Governor in Council.

Decisions regarding rates, tolls, and tariffs are implemented by the Board without reference to the Governor in Council, but "Reasons for Decision" are published.

Appeals of Board Decisions.

The National Energy Board is a Court of Record. With regard to attendance, the swearing and examination of witnesses, the production and inspection of documents, and the enforcement of its orders, it has all the powers vested in a superior court of record.

A decision or order of the Board can be appealed to the Federal Court of Appeal, providing the appeal is based on a point of law or of jurisdiction. Leave to appeal must be obtained from the Court within one month of the Board's decision, although the Court may allow a longer period under special circumstances. Judgements of the Federal Court of Appeal may, with leave, be appealed to the Supreme Court of Canada. The Federal Court of Appeal has jurisdiction to review and set aside a decision or order of the National Energy Board upon certain stipulated grounds.

The Trial Division of the Federal Court of Canada has exclusive jurisdiction to issue an injunction, writ of certiorari, writ of prohibition, writ of mandamus, or writ of quo warranto, or grant declaratory relief against any Federal Board, Commission or other tribunal.

Review of the Year

The availability and cost of energy were of major concern to the people and Government of Canada in 1974. This concern was shared by other oil-importing nations everywhere in the world. The dramatic rise in the price of crude oil exported by members of the Organization of Petroleum Exporting Countries (OPEC), affected not only the many organizations involved in energy industries, but had a direct impact on the economies of most countries in the world.

Energy is crucial to our Canadian life style and our economy. We have been accustomed to plentiful supplies at low cost. With our great distances, cold winters, and the relatively high use we make of fuel and electricity in many of our basic industries, it is not surprising that, after the United States, we have the highest annual per capita energy consumption in the world—approximately 275 million Btu (British thermal units) per person per year. Canada is still in the process of adjusting to the reality that the days of low cost resources, and energy resources in particular, have gone and may never return. Price increases have been greater for oil and gas than for electricity because of the diversity of primary energy sources used to generate electricity.

Supply and Demand

The restrictions placed in the latter part of 1973 and in early 1974 on oil production and sales by some Arab governments remained a concern. To deal with this emergency, the Minister of Energy, Mines and Resources called, among other things, for the formation of a government — industry committee, under the chairmanship of Mr. J.G. Stabback, a member of the Board, to provide advice to him. This group, the Technical Advisory Committee on Petroleum Supply and Demand, was responsible for ensuring adequate and equitable supply of crude oil and refined petroleum products to all parts of Canada.

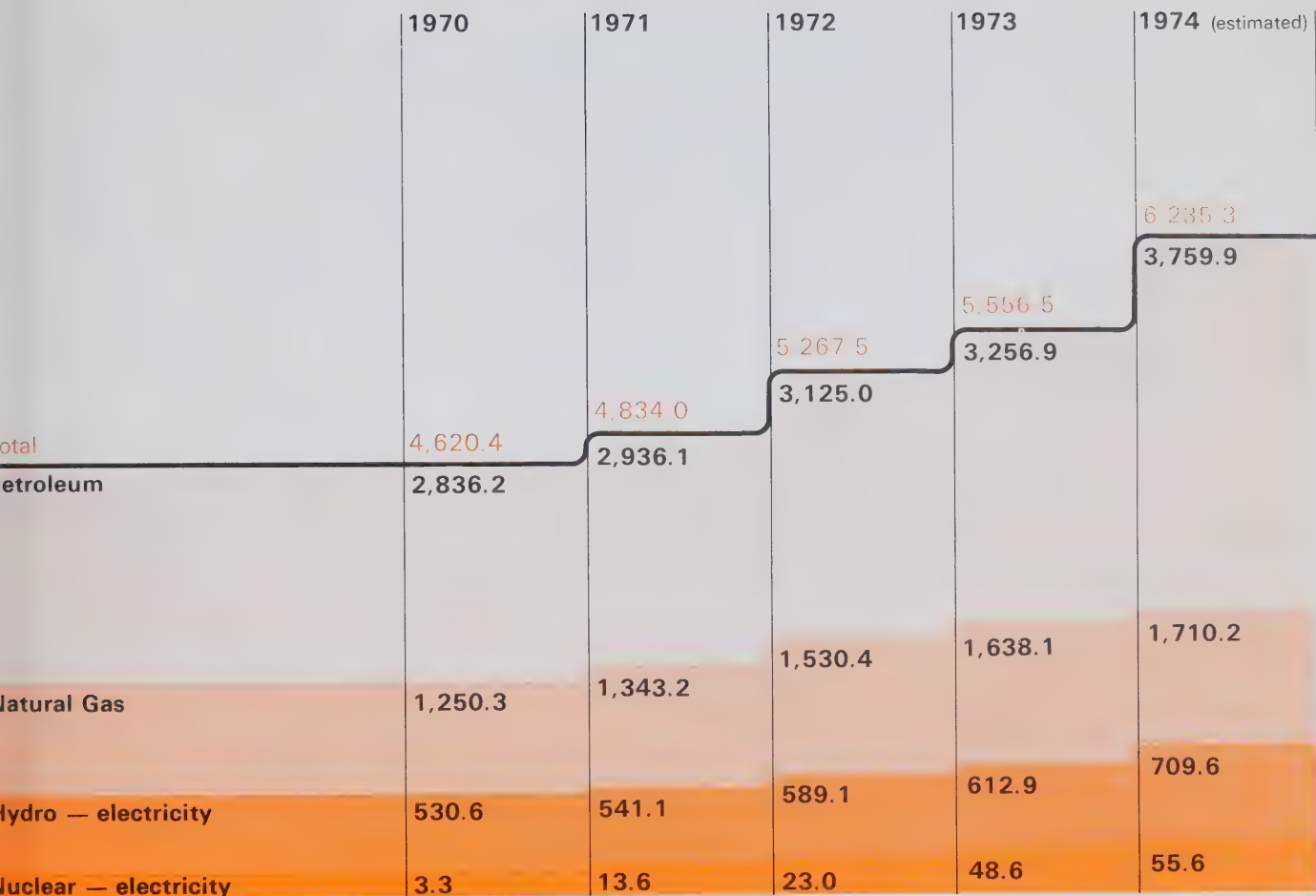
In general, supply and demand for petroleum products were in better balance in the last nine months of 1974 than in the previous winter. Higher prices for petroleum products in both the domestic and export markets appeared to reduce sales below forecast levels. Net sales of petroleum products in Canada increased 5.2 per cent in 1974 over the previous year, an estimated 607 million barrels compared with 577 million barrels in 1973, below the historical growth over the past 10 years of 5.4 per cent. Net sales of natural gas in Canada increased by eight per cent in 1974.

Canadian production of crude oil, including natural gas liquids, averaged 1,993,800 barrels a day, a decrease of 122,300 barrels from the daily average in 1973.

Electricity demand was met satisfactorily and good hydrologic conditions and adequate fuel supplies, particularly of coal, enabled exports to be made at prices considered by the Board to be just and reasonable in relation to the public interest, to meet emergency situations and to displace less economical generation in the United States.

Canadian consumption of energy

(Trillions of BTUs)



Oil Exports

Exports of crude oil and equivalent hydrocarbons in 1974 averaged 910,000 barrels per day compared with 1,100,000 barrels per day in 1973. Reluctance of some United States importers to purchase all of the quantities of crude oil licensed for export was much in evidence. Refined product export levels were also lower on average than in 1973 owing to a weakening of demand in the United States.

Exports to the United States of crude oil and petroleum products for 1974 amounted to an estimated 408.5 million barrels with a value of \$4,270.5 million. This compares with 508.4 million barrels in the previous year, with a value of \$1,782.1 million.

Since April of 1974, the Board has been responsible for the collection of the oil export charge from exporters. The Board collected and transmitted to the Receiver General of Canada \$1,206 million in the last nine months of 1974. The export tax previously in effect until the end of March 1974 was collected by the Department of National Revenue.

Established Oil Reserves

The estimated established remaining reserves of recoverable crude oil in Canada at the end of June 1974 amounted to 7,081 million barrels. Reserves of recoverable natural gas liquids were estimated to be 2,048 million barrels. The term, established reserves, covers reserves of oil or natural gas that are deemed to be recoverable with reasonable certainty under existing economic and operating conditions.

The amount of estimated reserves is arrived at through a highly complex investigation and evaluation process. This is carried out by the Board's own staff on the basis of extremely detailed information provided by provincial regulatory agencies and companies drilling for and producing oil.

The Board's own geologists and petroleum engineers, who are mostly based in Calgary, make their own independent studies using well logs, core analyses and pressure and flow data.

Natural Gas

An estimated 2,455 Bcf (Billion cubic feet) of marketable natural gas were produced in Canada in 1974, of which 1,329 Bcf were net sales in Canada and 959 Bcf, or 39 per cent, were exported to the United States. Net sales in Canada increased by eight per cent in 1974 over the previous year.

The Province of Quebec had the highest growth rate at 25 per cent, primarily because of the improved competitiveness of natural gas in relation to the substantially increased price for oil in eastern Canada and the low penetration of gas in earlier years.

Exports declined slightly in 1974. The Board has issued no new export licences since 1970.

Estimated proved reserves of natural gas as of June 30, 1974 were 59.7 Tcf (trillion cubic feet), a decrease of 7.0 per cent from the 1973 figure. New information and data are currently being gathered by the Board inquiry into natural gas supply, deliverability and requirements.

A problem in 1974 was the question of deliverability from natural gas fields. While there may be sufficient gas reserves in a field to satisfy customer demand for a period of time, declining pressures and other production factors may limit the rate at which the gas can be extracted and delivered to market. During the year deliverability problems in the Beaver River field in northern British Columbia caused a shortfall in meeting contractual obligations of Westcoast Transmission Company Limited to customers in the Pacific Northwest region of the United States.

Public Hearings

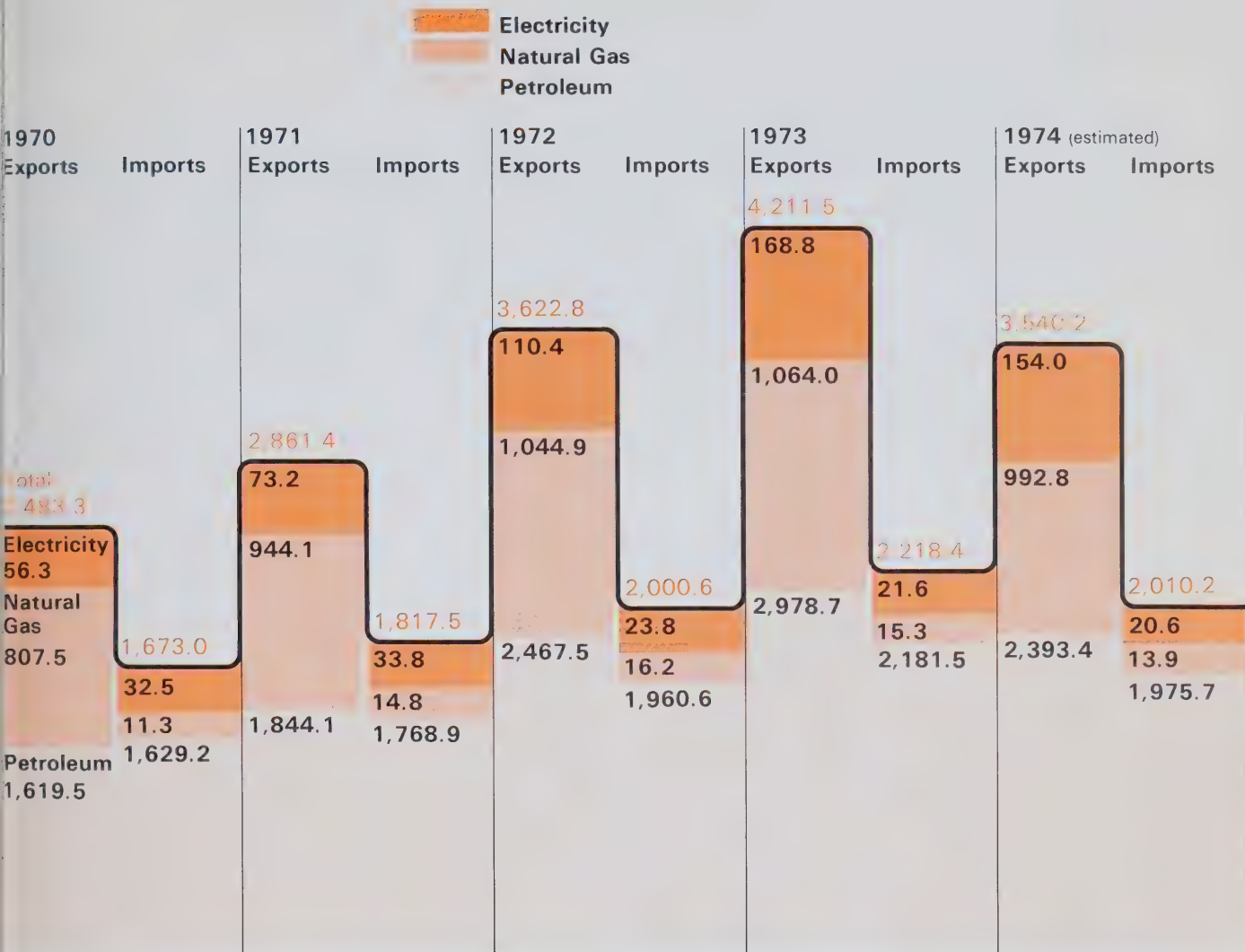
In keeping with the Board's policy of holding hearings in locations other than Ottawa so as to permit ease of access by individuals and organizations with an interest in the matter being heard, the Board sat in Vancouver, Calgary, Winnipeg, Toronto, Cornwall, Montreal, Quebec City and Fredericton as well as in Ottawa. There were 14 public hearings started or completed in 1974.

The most significant of these hearings and the recommendations resulting from those that have been completed, are dealt with in greater detail in the "Operations Review" chapter of this report. They were:

- The Report in the Matter of Exportation of Oil, which resulted in a Government decision to phase out gradually exports from Canada;
- The pricing of natural gas exports, which led, as a first step, to the establishment of a uniform export price of \$1.00 per Mcf;
- The application of Interprovincial Pipe Line Limited to construct an oil pipeline from Sarnia, Ontario to Montreal, Quebec, on which hearings will resume in 1975;
- The inquiry into the supply, demand and deliverability of natural gas, which commenced in November;
- An application to export, import and re-export ethylene derived from natural gas.

Energy Exports and Imports

(Trillions of BTUs)



The Board issued 3,196 certificates, licences, orders and permits in 1974, an increase of 18 per cent over the number issued the previous year. While there were wide variations in complexity, each one required individual study and assessment.

Future Developments

Canada is fortunate in that our resources, technology and available investment capital permit us to plan for some form or degree of energy self-sufficiency. That is not to say that planning for the next decade can be precise and clearly identified. Events of the past two years have shown again that our perspective on energy development and use can be modified by political, economic and social

events both in Canada and abroad. Over the next decade Canada will achieve a considerable measure of energy self-sufficiency, but this will involve higher prices for oil and natural gas, a reduction in exports of oil and possibly natural gas, the development of frontier and non-conventional hydrocarbon reserves, and the greater use of Canadian coal and uranium for the generation of electricity.

Litigation

The Board was involved in litigation as a named party on four occasions arising out of its activities during 1974.

In January, following a public hearing, the Board announced its decision to issue a licence to the Hydro-Electric Power Commission of Ontario to export interruptible power to the United States for a period terminating on 31 December, 1975. The Consumers' Association of Canada and Pollution Probe at the University of Toronto requested leave to appeal on several grounds, including that the Board was required to take into account evidence of "social costs" incurred in Canada, and that lacking sufficient evidence on such matters, the Board had no power to issue the export licence. The Federal Court found that the Board had committed no error of law, and dismissed the application to appeal.

During hearing of an application by Dow Chemical of Canada, Limited, for a licence to export, import and re-export from Canada a substantial quantity of ethylene, the Board decided that, in order to expedite the hearing, it would consider only written representations from intervenors. This had the effect of limiting intervenors to two written representations each, with examination being carried out only by Board counsel. The Board's reason for adopting this procedure was that some possibility of exporting ethylene was involved in a related application of Dow and Dome Petroleum Limited which had already been decided by the Board after extensive hearings. At that point the Board decided to invoke its jurisdiction over the export of ethylene but took the view that, in these circumstances, another lengthy hearing covering much of the same evidence was not necessary. The decision to attempt to expedite the hearing did not carry any implication whatever as to what the Board's decision might have been had the matter proceeded to a conclusion.

In any event, this procedure was challenged in the Federal Court by the Attorney-General of Manitoba together with others who sought an order of certiorari, an order of prohibition and finally, an order of mandamus directing the Board to fix a date for a full public hearing of the applications. The court gave judgement in which the applications for certiorari and for an order of mandamus were refused, while an order of prohibition was issued by the court forbidding the Board from rendering a decision on the application for the export and import authorizations sought by Dow Chemical of Canada Limited. The judgement of the court held, among other things, that because the National Energy Board Act has bestowed upon the Board the attributes of a court and because the Statute and the Regulations contemplate a full adversary hearing, it follows that the word "hearing" in section 20 of the National Energy Board Act must have attributed to it the same meaning as in a court of law, that is, a hearing before the Board is analogous to and imports a trial as in a court of law and this the Board did not carry out. Dow Chemical of Canada Limited, Dome Petroleum Limited, and Cochin Pipelines Limited have appealed this judgement to the Federal Court of Appeal.

In August of 1974, the Board held a hearing concerning an application by TransCanada Pipelines Limited to construct 58.5 miles of additional pipeline to transport natural gas purchased by Greater Winnipeg Gas Company and Gaz Métropolitain, inc. of Montreal. Before the close of the hearing, Union Gas Limited, one of the intervenors, launched proceedings in the Federal Court seeking orders of prohibition and certiorari to alter the Board's rulings under its Rules of Practice and Procedure regarding the order of presentations by the intervenors and the relevance and admissibility of certain evidence. The court dismissed the applications and on August 23, 1974, the Board authorized the construction of the pipeline by TransCanada.

In September, the Ministry of Energy of the Province of Ontario applied to the Federal Court of Appeal for an order directing a stay of execution of the Board's authorization of August 23. This action was dismissed by the Court.

The Ministry of Energy of the Province of Ontario launched actions in the Federal Court of Appeal for an extension of time within which an application could be made to the court to review and set aside the Board's decision to issue the certificate of public convenience and necessity to TransCanada, an application for leave to appeal the decision of the Board to issue the said certificate and an appeal from the judgement of the Trial Division determining the applications described above. The application for an extension of time and the application for leave to appeal were each dismissed and the appeal from the Trial Division's judgement was quashed.

Membership of the Board

In April of 1974, William A. Scotland and Jacques Farmer were appointed members of the Board for terms of seven years. A graduate in chemical engineering, Mr. Scotland has experience in Athabaska oil sands and in reservoir engineering. He joined the staff of the Board in 1960, becoming chief engineer in 1968. From 1972 until his appointment to the Board, he served as senior advisor on Canada-United States relations regarding oil and gas in the Department of Energy, Mines and Resources.

Mr. Farmer is a graduate in electrical-mechanical engineering from the Ecole Polytechnique in Montreal. From 1949 until he joined the Board, he was associated with Hydro-Québec and latterly with Gaz Métropolitain, inc., his last position being Vice President, Gas Supply. Mr. Farmer brings to the Board an extensive background in gas engineering and planning.

N.J. Stewart, Associate Vice-Chairman of the Board, was appointed in January, 1974 to the post of Chairman of the newly-created Energy Supplies Allocation Board.

Jack G. Stabback, a member of the Board since 1968, was appointed Associate Vice-Chairman of the Board in January, 1974. Mr. Stabback is a graduate engineer and before becoming a Board Member, was the Board's Chief Engineer.

At the present time, the Board is one member short of its authorized complement of nine.

Personnel

To meet the additional responsibilities of the Board in 1974 as well as to carry out the higher volumes of regulatory work, it was necessary to increase the number of staff. At the end of 1974, the total strength of the Board was 311 people as compared with 280 on December 31, 1973.

Budget Allocation

The budget appropriation for the 1974-75 fiscal year was \$6,148,045, of which \$5,277,045 was for salaries and \$871,000 for all other expenses. Equivalent amounts for the previous fiscal year were \$4,235,957 for salaries and \$819,395 for other expenses.

Exploration and Development Activity

Oil and Gas

The level of exploratory drilling activity in the conventional producing areas of western Canada in 1974 was substantially below that of 1973. Preliminary estimates indicate that some 1,700 exploratory wells were drilled in 1974 compared with nearly 2,050 in 1973, a decline approaching 20 per cent.

Exploratory drilling activity in the frontier areas also declined materially. A total of 63 wells were drilled in 1974 in the Mackenzie Delta area, the Arctic Islands and the east coast offshore areas, 16 less than in the preceding year.

The more significant developments during 1974 are commented on in this section and are identified on the map.

Mississippian gas discoveries at Morley (No. 1), Willson Creek (No. 2), Stolberg (No. 3), and Obed (No. 4), all in west-central Alberta are considered the major finds in western Canada during the year. Also in Alberta, a number of gas discoveries and successful extensions to existing fields occurred, particularly in the general Peace River area in the north-western sector of the province (No. 5). Extensive development of shallow gas reserves in southeastern Alberta continued.

In Saskatchewan, exploratory activity was largely confined to gas prospects in the western part of the province. There was development drilling (No. 6) in the Hoosier-Doddsland, Lloydminster and Estevan-Steelman oil producing areas and in the Hatton shallow gas area.

Activity in Manitoba was nominal, with no developments of particular significance forthcoming.

In British Columbia, two discoveries on trend in the Grissly fields south of Dawson Creek (No. 7) may prove to be important. Successful development and stepout drilling took place at a number of other localities.

Two oil discoveries were recorded in the Mackenzie Delta area, Shell Kumak (No. 8) and Imperial Adgo (No. 9). The full significance of these wells cannot be determined without additional drilling but they are considered highly encouraging. Two other exploratory wells drilled in this area during the year found gas.

There were no indicated commercial discoveries in the Arctic Islands in 1974 although a well on Cameron Island, Panarctic Bent Horn (No. 10), had an encouraging show of oil. Successful development wells were drilled in the Drake Point (No. 11) and Hecla (No. 12) fields on Melville Island.

In east coast offshore waters considerable excitement was generated by two gas discoveries on the Labrador shelf, Eastcan et al Bjarni and Eastcan et al Gudrid (No. 13). Again it would be premature to attempt to assess their ultimate importance, but they are classed as being potentials of major significance.

A gas-condensate discovery was made at Mobil et al Citnalta (No. 14), on the Scotian Shelf northeast of Sable Island. Hudson's Bay Oil and Gas Co. Ltd.'s well East Point (No. 15), northeast of Prince Edward Island drilled in 1970, was tested during 1974 and yielded a moderate flow of natural gas.

Oil and Gas developments



- 1 Morley (Mississippian Gas Discovery)
- 2 Willson Creek (Mississippian Gas Discovery)
- 3 Stolberg (Mississippian Gas Discovery)
- 4 Obed (Mississippian Gas Discovery)
- 5 Peace River Area (Gas Development)
- 6 Saskatchewan (Development drilling)
- 7 Grizzly Valley (Two gas discoveries)
- 8 Kumak (Tertiary oil discovery)
- 9 Adgo (Tertiary oil discovery)

- 10 Bent Horn (Oil recovery)
- 11 Drake Point (Gas development)
- 12 Hecla (Gas development)
- 13 Labrador Shelf (Two gas discoveries)
- 14 Citnalta (Gas-condensate discovery)
- 15 East Point (gas flow on test)

Oil and Petroleum Products

Preliminary statistics for 1974 indicate a lower rate of growth in demand for oil products. This tendency was accentuated by mild weather in the last three months with refiners finding themselves with very high inventories of heating oils. Increases in product prices, although moderated by operation of voluntary price controls related to the oil import compensation program, together with a deterioration of the overall economic outlook in the latter part of the year, have undoubtedly been factors in holding down demand.

Although at the beginning of the year there was some uncertainty about the supply of imported petroleum, world supply patterns being still distorted by embargoes and production cutbacks imposed by some exporting countries, the actual degree of curtailment was not as deep as in late 1973. Adequate relief was provided through extraordinary measures such as the shipment of crude oil from western to eastern Canada via the Panama Canal and, during the shipping season, via the Great Lakes. Some 24.5 million barrels were moved by these means to eastern Canadian refineries. West to east shipments were at their peak during the spring of 1974 and they declined steadily and virtually ceased at the end of the year.

While these measures, together with the higher cost of oil imported from the Middle East and Venezuela, added considerably to overall costs, adequate supplies were maintained in all parts of Canada. Preliminary figures indicate that refinery output was maintained somewhat above the levels of 1973.

In late March a conference of First Ministers in Ottawa decided that the price of Canadian oil and equivalent hydrocarbons would increase by \$2.70 to \$6.50 a barrel. There had been a substantial economic incentive for oil companies to move western oil to eastern refineries while the wellhead price of western oil had been frozen at September 1973 levels. The March increase in price undoubtedly had the effect of reducing the west-east movement.

Petroleum Production and Consumption

Production of crude oil and natural gas liquids in 1974 was an estimated 1,993,800 barrels per day, of which 86 per cent came from fields in Alberta. This compares with 2,116,100 barrels per day in 1973, a decrease of 5.8 per cent.

Net sales of petroleum products in Canada in 1974 are estimated at approximately 607 million barrels, equivalent to 1,664,100 barrels a day, an increase of 5.2 per cent over 1973, compared with an average annual increase of 5.4 per cent over the previous 10 years.

The rate of growth in consumption of motor gasoline in 1974 was well below previous levels. Net sales of motor gasoline increased 3.1 per cent, while the 1973 increase over 1972 was 9.0 per cent and the 10-year average gain was 5.5 per cent. The 1974 net increase in middle distillate sales was 6.1 per cent against a 10-year average of 5.1 per cent. Heavy fuel oil demand increased, primarily due to increased demand for thermal power generation.

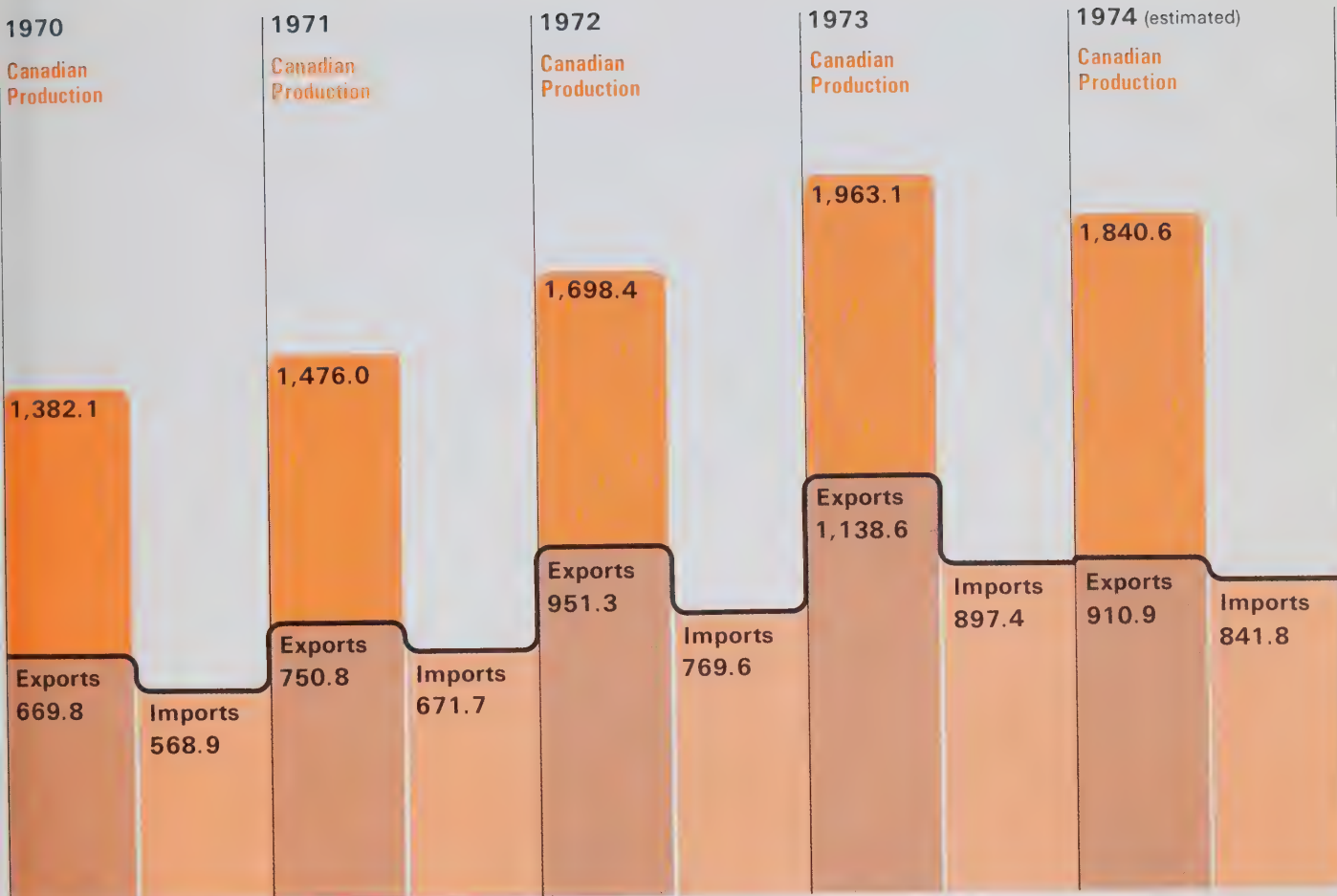
Exports and Imports of Oil

Exports of crude oil and petroleum products in 1974 were estimated to be 1,119,300 barrels per day, or 408.5 million barrels for the year. Imports amounted to 926,600 barrels per day or 338.2 million barrels for the year. In 1973 exports were 508.4 million barrels (1,393,000 barrels per day) and imports were 373.4 million barrels (1,023,100 barrels per day). Exports declined 19.6 per cent in 1974 compared with 1973, while imports were 9.4 per cent less.

Exports of crude oil and equivalent hydrocarbons and of most petroleum products were subject to licences issued generally on a monthly basis during the year. These licences covered 307.7 million barrels of crude oil and 62.4 million barrels of other petroleum products. Not all of the licensed quantities were shipped.

Crude Oil and Equivalent Hydrocarbons

(Unit: Mb/d)



From April, 1974, the Board was responsible for collecting and auditing the oil export charge. The amount collected and transmitted to the Receiver General in the nine months totalled \$1,206 million. From January to March, the export charge was collected by the Department of National Revenue and totalled \$425.5 million.

In January of 1974, the export charge on crude oil and condensate was \$2.20 per barrel. This increased to \$6.40 in February, was reduced to \$4.00 in April, and then raised to \$5.20 per barrel in June, where it remained for the rest of the year. Specific heavy crude oils were allowed a differential effective November 1 in order to improve their competitiveness.

In May of 1974, an export charge of \$4.00 per barrel was levied on motor gasoline, motor gasoline components, middle distillates and heavy fuel oil. On August 1, these charges were reduced to \$1.50 per barrel for motor gasoline and motor gasoline components, and to \$2.00 per barrel for distillates and heavy fuel oil.

Oil and Product Pipeline Companies under NEB Jurisdiction



- | | |
|--|--------------------------------------|
| 1. Imperial Oil Limited | 10. Wascana Pipe Line Ltd. |
| 2. The Imperial Pipe Line Company, Limited | 11. Westspur Pipe Line Company |
| 3. Interprovincial Pipe Line Limited | 12. Aurora Pipe Line Company |
| 4. Montreal Pipe Line Company Limited | 13. Cochin Pipe Lines Ltd. |
| 5. Murphy Oil Company Limited | (Approved but not constructed) |
| 6. Northwest Transmission Company Limited | 14. Dome Kerrobert Pipeline Ltd. |
| 7. Sun Pipe Line Company | 15. Dome NGL Pipeline Ltd. |
| 8. Trans Mountain Pipe Line Company Ltd. | 16. Dome Petroleum Limited |
| 9. Union Oil Company of Canada Limited | 17. Dow Pipeline Ltd. (No pipeline) |
| | 18. Petroleum Transmission Company |
| | 19. Trans-Northern Pipe Line Company |
| | 20. Yukon Pipelines Limited |

Oil Export Report

The Report in the Matter of the Exportation of Oil, made to the Minister in October, 1974, resulted from hearings in Calgary, Vancouver and Ottawa, starting in April 1974. Detailed analysis of established reserves and the likelihood of new oil field discoveries, together with a review of the long term demand for Canadian oil, resulted in a major change in Government policy in regard to exports. The inquiry established that there will be a decline in production from established oil fields starting in 1975 and continuing into the 1980's, when oil from frontier areas in the north and from the oil sands in Alberta should become available in significant amounts.

Faced with a demand for oil in 1982 that, on the basis of supply and demand trends, will result in an overall national deficit of 200,000 barrels a day, the Board recommended that exports of crude oil and petroleum products be reduced in a manner to cause minimum injury to those areas of the United States currently dependent on Canadian supplies.

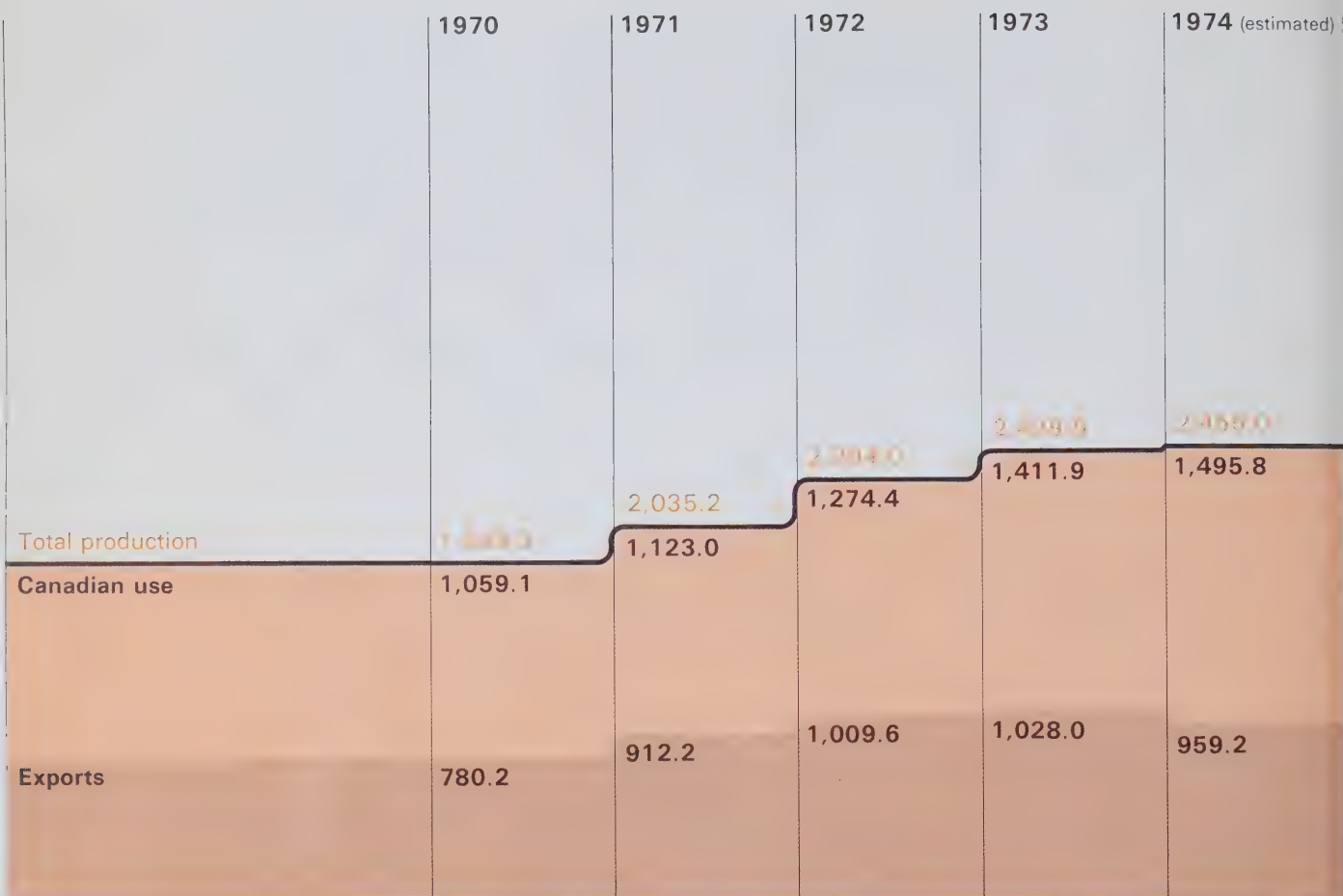
Under new procedures adopted by the Board, the amount of oil that can be exported is computed annually, with a system of monthly licences in force to ensure that Canadian requirements are met. The new formula fixes the annual amount of crude oil available for export in relation to oil producibility, Canadian demand, and a conservation factor estimated for that year. This has the effect of reducing oil exports progressively as the estimated period of self sufficiency decreases in the area of Canada served by oil of Canadian origin.

Pipeline to Montreal

Another important hearing followed the application of Interprovincial Pipe Line Limited to construct a pipeline of approximately 500 miles from Sarnia, Ontario to Montreal, Quebec. This hearing was recessed in October at the request of Interprovincial Pipe Line Limited to allow further study of the supply situation and the financial effects. The proposed 30-inch pipeline would have an initial capacity of some 250,000 barrels a day and a fully-powered capacity of 650,000 barrels a day. The hearing enquired into many environmental and land use aspects of the proposed pipeline.

Natural Gas Production

(Bcf @ 14.73 p.s.i.a.)



Natural Gas

Natural gas continued to be in heavy demand throughout 1974 both in Canada and in the export market. Net sales in Canada at 1,329 Bcf were eight per cent greater than the 1973 total of 1,229 Bcf. Net sales increased in all provinces except Saskatchewan and British Columbia, where substantial reductions in the amounts used for thermal generation of electricity outweighed increases in other end uses. At 25 per cent, growth was particularly strong in Quebec, reflecting the substantial increases in oil prices relative to natural gas.

Commercial users recorded the highest rate of growth at 16 per cent, compared with an increase of 12 per cent for residential users and four per cent for industrial users and electric utilities. When gas consumed by electric utilities is excluded, industrial consumption is estimated to have increased by 11 per cent.

Exports of Natural Gas

Net exports of natural gas to the United States totalled 959 Bcf for the year, a 6.7 per cent decrease from the 1,028 Bcf exported the previous year. This decrease was attributable to deliverability problems in the Beaver River field in northern British Columbia.

The Board issued no new export licences in 1974, nor has it since 1970. Two applications to export gas made in 1973 by Alberta and Southern Gas Company Ltd. and Canadian-Montana Pipe Line Company were deferred by the Board in 1974 until further notice. In September, 1974, Pan Alberta Gas Limited withdrew an export application made in 1973.

New Export Price Established

A hearing, held in the Spring of 1974, into the pricing of Canadian natural gas being exported under existing licences led to the establishment of a uniform border price substantially above the prices then prevailing. Long term licences to export gas cover about 1 trillion cubic feet a year or some 40 per cent of Canadian production. At the 1974 hearing, existing export prices were found to be unrealistically low when compared with the greatly increased cost of fuel oil, the principal alternative to gas for residential, commercial and most industrial uses.

The Board recommended to the Governor in Council that natural gas being exported to the United States should be priced on the basis of a scarce, non-renewable natural resource; that initially a new export price of \$1.00 per Mcf be established; and that the price be increased progressively towards the commodity value. In supporting the Board's recommendation, the Government also endorsed the principle of further price increases, although there was no commitment as to the scale or timing of such increases. The government, in approving the new export price of \$1.00 per Mcf, stated that the additional export revenues so generated should be paid to gas producers in order to encourage additional exploration and production. In British Columbia most of the additional revenue was paid to the British Columbia Petroleum Corporation.

The Board expects to undertake in 1975 a further review of the export price situation, which could lead to recommendations for further increases.

Inquiry into Natural Gas Supplies

Hearings on the supply, demand and deliverability of Canadian natural gas were held in a number of cities in the gas producing and consuming areas of Canada starting in November 1974, and are expected to conclude in March 1975. The Board expects to issue its report before mid-1975. These hearings attracted more than 60 interventions and submissions from industry, associations, provincial authorities and interested groups and individuals.

Pipeline Expansion

Westcoast Transmission Company Limited obtained the Board's approval to construct 60 miles of gas gathering pipelines to improve producibility and deliverability on its pipeline system.

TransCanada PipeLines Limited obtained approval for 60 miles of pipeline construction in loops along its system to improve reliability and increase flows.

Trans Mountain Oil Pipeline built additional crude oil loading facilities in Vancouver to load tankers delivering oil to eastern Canada via the Panama Canal.

The Board's own inspectors checked many new pipeline installations both during and after construction to ensure that the Board's regulations were being followed.

A complete set of gas pipeline regulations was issued in 1974 and revised oil pipeline regulations are now being discussed with industry and other authorities. The Board's Rules of Practice and Procedure were amended to include additional requirements respecting Canadian content and environmental assessments.

Gas Pipeline Companies under NEB Jurisdiction



- | | |
|---|--|
| 1. Alberta Natural Gas Company Ltd. | 9. Mid-Continent Pipelines Limited |
| 2. Amoco Canada Petroleum Company Ltd. | 10. Minell Pipeline Ltd. |
| 3. Canadian-Montana Pipe Line Company | 11. Murphy Oil Company Limited |
| 4. Champion Pipe Line Corporation Limited | 12. Niagara Gas Transmission Limited |
| 5. Consolidated Pipe Lines Company | 13. Patrick T. Buckley |
| 6. Dome Petroleum Limited | 14. Peace River Transmission Company Limited |
| 7. ICG Transmission Limited | 15. Saskatchewan Power Corporation |
| 8. Many Islands Pipe Lines (Canada) Limited | 16. TransCanada PipeLines Limited |
| | 17. Union Gas Limited |
| | 18. Westcoast Transmission Company Limited |

Export Control of Propane and Butanes

The amount of propane and butane which can be exported from Canada is controlled by the Board through a licensing and order system. No new long-term licences were issued in 1974. The quantities available for export under order are determined for each year (April to March) on the basis of estimated annual Canadian production less estimated Canadian requirements and previously licensed exports. Exports are authorized monthly on the basis of the available supply in the month.

In 1974, exports of propane equalled 55 per cent of net production and exports of butanes 56 per cent of net production.

The minimum export price for these commodities is established by the Board monthly. In 1974 these minimum prices were for propane in a range between 14 and 20 cents per gallon, and were 19 cents in December. For butanes the range was between 12 and 21 cents a gallon, with the higher figure prevailing in December.

Other major projects of concern to the Board included:

Canadian Arctic Gas Pipeline Limited

After a considerable program of research both in the field and in the laboratory, a partially completed application for a gas pipeline from Alaska and the Mackenzie River Delta and Beaufort Sea area to markets in southern Canada and the United States was submitted to the National Energy Board in 1974. The Board has been working on a detailed appraisal of the application and it is expected that it will be set down for hearing commencing in mid-1975.

Foothills Pipe Lines Ltd.

A competing gas pipeline project for the transportation of gas from the Mackenzie River Delta and Beaufort Sea is expected to be filed with the Board in 1975 by Foothills Pipe Lines Ltd.

Polar Gas Pipeline Project

Following the discovery of significant volumes of gas in the Arctic Islands by Panarctic Oils Ltd., the Polar Gas Pipeline Project was established to carry out feasibility studies on the transportation of natural gas from the Arctic Islands to markets in Southern Canada. The work on this project is in its early stages and no application has been submitted.

Coal Gasification Project

TransCanada PipeLines Limited intends to embark upon a major study on the recovery of gas from coal, and in 1974 applied to the Board for permission to include the research and development costs, including carrying charges, in its rate base. This application will be heard early in 1975.

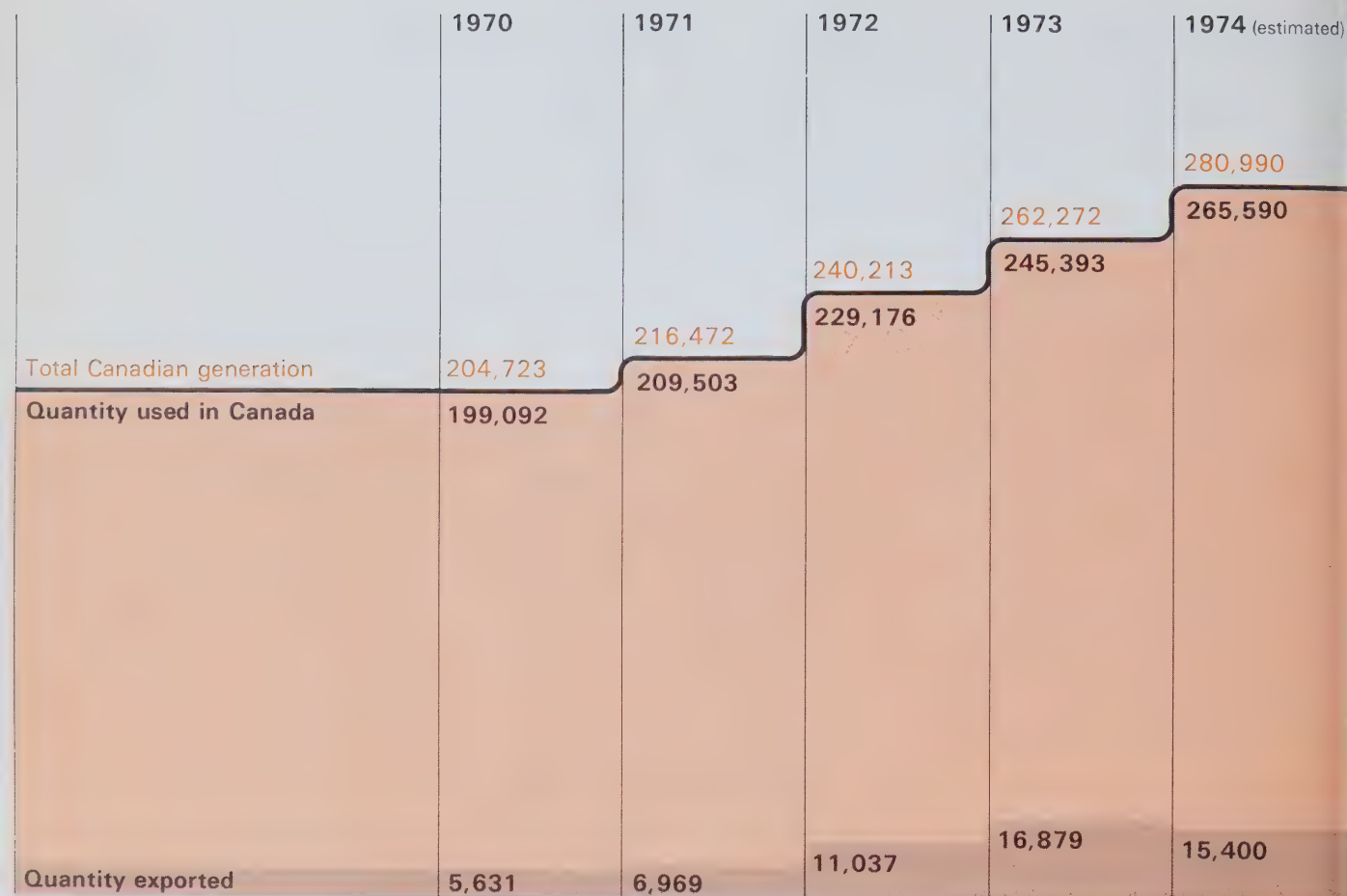
Rate and Tariff Decisions

A significant change in the basis for deciding rates was made during the year, when the Board allowed TransCanada PipeLines to use the concept of a "projected test year" rather than a historical test year in calculating its rates. This allows a pipeline company to forecast certain of its revenues and costs.

Two rate applications by TransCanada PipeLines were heard in 1974. The decision upon the first allowed an average increase of 2.3 cents per Mcf and that upon the second an increase of 23.8 cents per Mcf due to increases in the field price of natural gas.

Electricity Generation

(Gigawatthours)



Electrical Energy

Canada's total electrical generating capacity in 1974 was 54,507 MW (Megawatts), of which hydroelectricity accounted for 34,431 MW, oil or coal fired thermal capacity 15,855 MW and nuclear power 2,536 MW. Total generating capacity was 4.6 per cent greater than in 1973.

Total Canadian consumption of electricity in 1974 is estimated to have been 268,000 GWh (Gigawatthours), an eight per cent increase over the year before. Industrial users accounted for 53 per cent of total demand, residential and farm 20 per cent, commercial and other 13 per cent. The balance was unallocated or was accounted for by transmission losses.

Export and Imports of Electricity

Gross exports of electrical energy to the United States in 1974 were 15,399 GWh and imports were 2,441 GWh resulting in net exports of 12,958 GWh, or 4.6 per cent of total Canadian generation, with a value of \$160 million. Principal export

suppliers were Ontario (7,880 GWh), British Columbia (2,800 GWh), and New Brunswick (2,500 GWh). The comparative net exports for 1973 were 14,717 GWh with a value of \$108.6 million.

There is a long history of electrical interconnection between Canada and the United States. The first transmission line to cross the border was a 12 kV circuit built at Niagara Falls about 1900. Additional lines have been built over the years and today they total 65, ranging in voltage from 115 volts, connecting an individual cottage or customs post, to 500,000 volts. Total transfer capability is rated at 5,200 MW. The increasing number of interconnections has enabled United States and Canadian utilities to assist each other during emergencies.

In recent years many United States electrical utilities have had supply problems due to regulatory delays, unit outages and fuel shortages. This situation led to increased Canadian opportunities for the export of electricity generated from imported coal, imported oil and from summer surpluses of interruptible natural gas as well as surplus hydro generation.

Exports have increased markedly during the summer months when most of the United States utilities have their annual peak due to air-conditioning loads and Canadian utilities have spare capacity during their low load period. Future plans of utilities call for additional interconnections and for increased summer exports which will be offset by imports in the winter to assist Canadian utilities in meeting their winter peaks.

The Board keeps in close touch with the power situation in North America through a staff observer who attends quarterly meetings of the National Electric Reliability Council. This organization is made up of nine regional councils representing all United States electric utilities and those in the provinces of New Brunswick, Ontario, Manitoba and British Columbia, and promotes adequate and reliable power supplies through coordinated planning and operation.

Interprovincial Transfers of Electricity

Interprovincial transfers of electricity are not regulated by the National Energy Board but are encouraged by the Federal Government under the National Power Policy.

Canadian electrical utilities all have their annual peak in the winter and there is very little diversity of load between Canadian utilities. Interprovincial transfers are, however, much larger than exports and increased to 41,000 GWh in 1974 from 25,000 GWh in 1973. These transfers take advantage of special situations. Churchill Falls in Labrador was developed to meet Quebec's needs as the power available was much greater than could be absorbed by Newfoundland. Hydro-Quebec has brought major new hydroelectric plants into service in recent years and has delivered large amounts of surplus hydroelectric energy to eastern Ontario and New Brunswick. Manitoba Hydro has advanced the development of the Nelson River and has supplied part of

western Ontario's load and also exchanged significant amounts of power with the basically thermal system in Saskatchewan. Calgary Power in Alberta, which is a thermal power system, has interchanged smaller amounts of electricity with the hydroelectric power systems in British Columbia. Provincial interconnections have been steadily strengthened to take advantage of these opportunities

Applications to Export Power

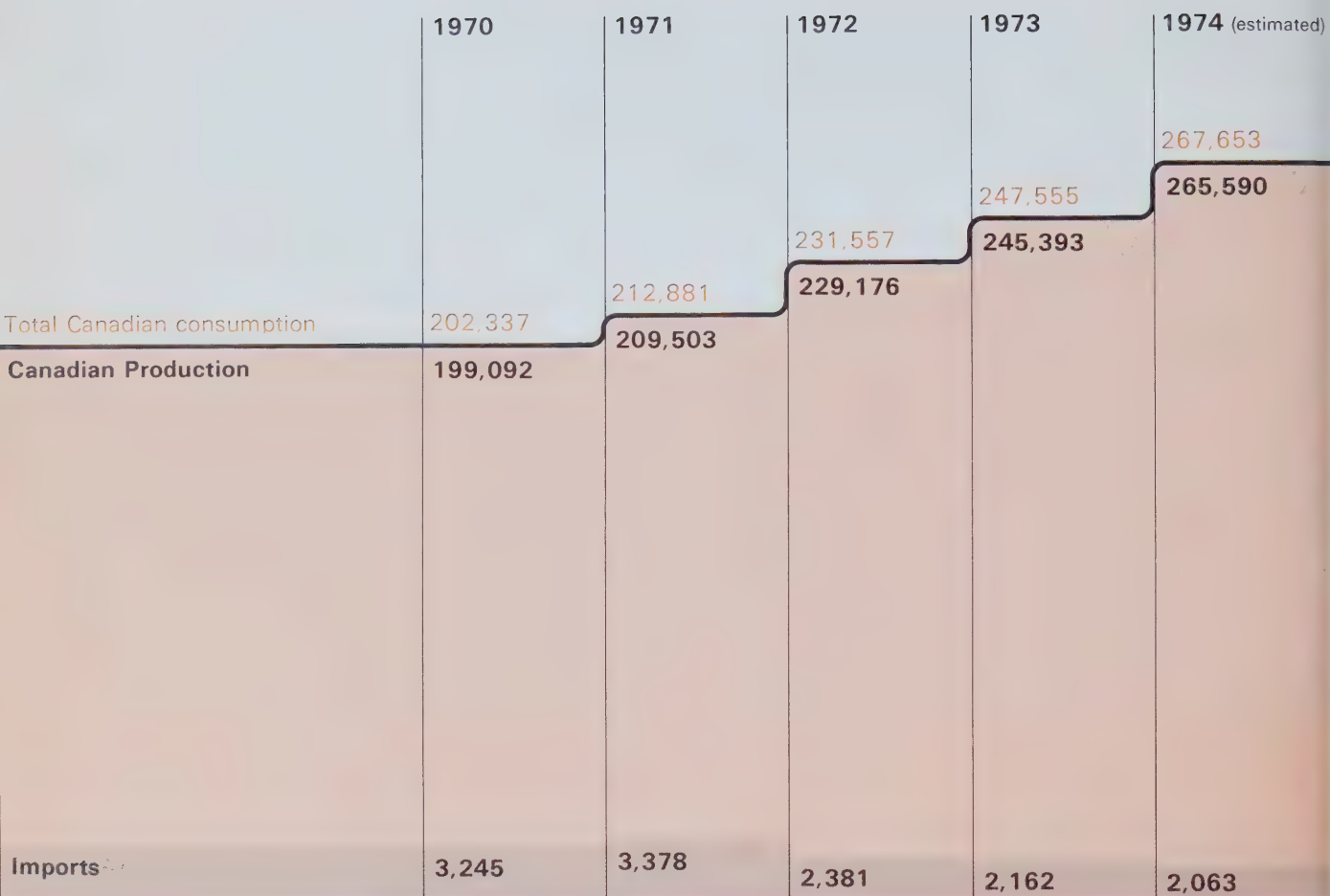
Applicants for licences to export power must satisfy the Board that the energy proposed to be exported will be surplus to reasonably foreseeable Canadian needs.

To ensure that export prices are just and reasonable, an applicant must also satisfy the Board that the price will cover the cost of producing the power and transmitting it to the border, that it will not be less than the price to Canadians for comparable service, and that it will not be markedly less than the lowest cost alternative to the purchaser. The value to Canada of related imports is also taken into account.

In 1974 there were three hearings of applications to export power. One, to export 150 GWh of interruptible energy to Niagara Mohawk Power Corp. of New York by St. Lawrence Power Company, was held in Cornwall and a licence issued. Fraser Companies, Limited applied to export firm and interruptible power to a subsidiary in the State of Maine; a hearing was held in Fredericton and a decision is pending. An application by Hydro-Québec to export 1,530 GWh of interruptible power annually for a period of 29 months starting January 1, 1975 was approved following a public hearing held in Montreal.

Electricity Consumption

(Gigawatthours)



The Board also issued two emergency orders to Hydro-Québec allowing exports of 765 GWh of electrical power to Consolidated Edison of New York. Consolidated Edison needed emergency support because of generating unit failures and fuel shortages.

An application by Hydro-Québec to export power to the Power Authority of the State of New York, which also involves the construction of a new 765 kV international power line, was received but has not yet been set down for a hearing.

British Columbia Hydro and Power Authority has applied to export power to the Bonneville Power Administration and other utilities. This application is for the replacement of existing licences and will be heard in 1975.

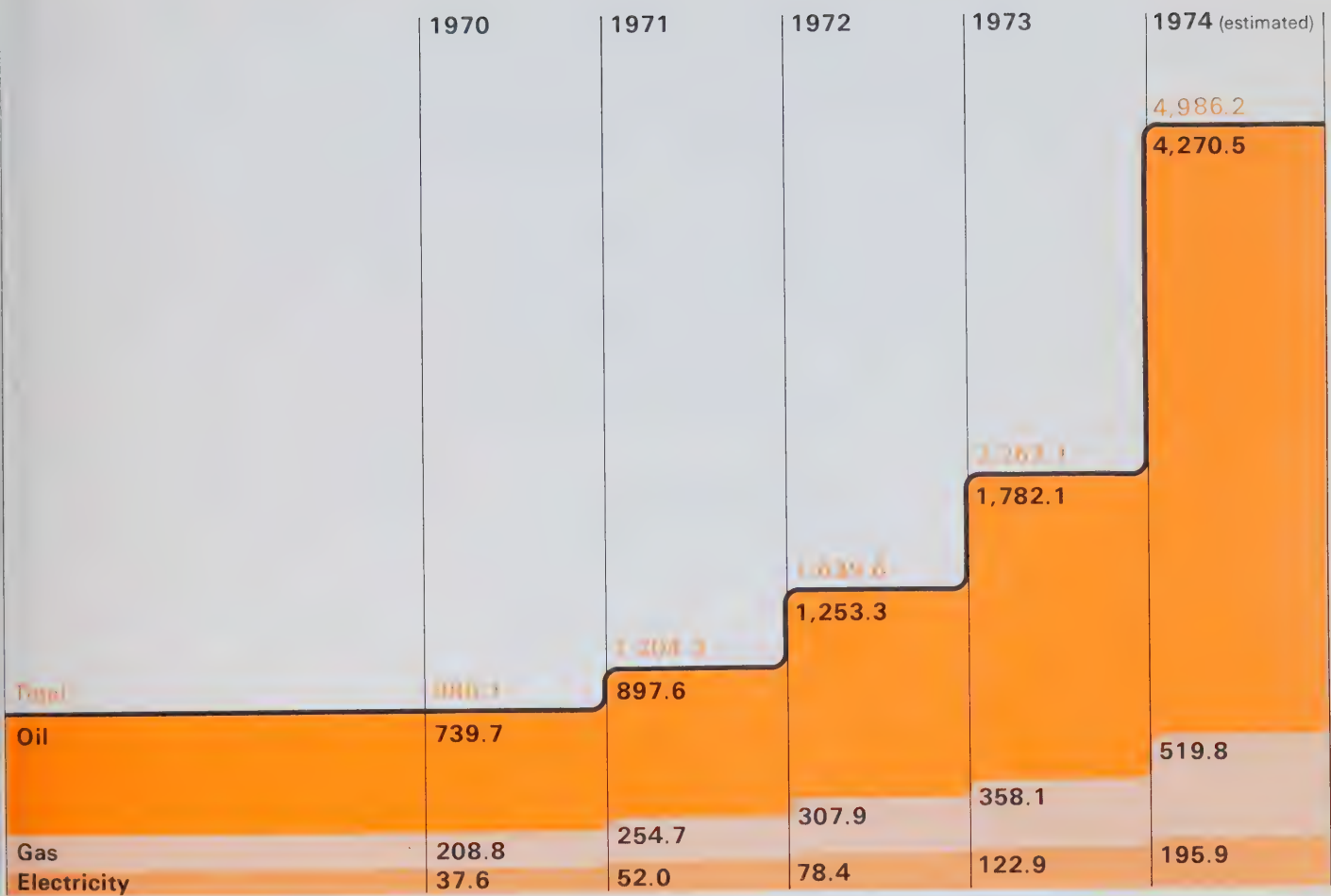
Other Activities

During the year studies were completed on the marketing and transmission of tidal power for the Bay of Fundy Tidal Power Review Board. The Review Board's report, which was tabled in the House of Commons on November 28, 1974, concluded that the economic position of tidal power had improved significantly and recommended that \$3 million be allocated for further studies.

At the request of the Department of Energy, Mines and Resources, the staff participated in studies related to the economic and technical feasibility of the Gull Island Development in Labrador for meeting load growth in Newfoundland. The Board staff also reviewed and participated in studies on the submarine cable interconnection between Prince Edward Island and the mainland. In addition a report was published on Canadian thermal plant generation, fuel consumption and operating characteristics for the year 1973.

Dollar value of Exports

(Millions of dollars)



Financial Matters

During 1974 the Board continued to monitor and assess the financial and economic impact on Canada of a wide variety of applications for pipeline construction, energy exports and tariff determinations. Rapidly changing conditions in the financial community and in the energy industry itself, combined with enormous capital requirements for exploration, development and new transportation projects, necessitated careful appraisal of matters such as cash flow, financing arrangements, toll determinations, long range budget forecasts and depreciation policies.

The Board also continued to review its Uniform Accounting Regulations for oil and gas pipeline companies to ensure that they properly reflect current accounting, industry and regulatory practices. In addition, the Board conducted field audits of the accounts of 12 major gas and oil pipeline companies and 21 licensed oil exporters.

As in previous years, the Board maintained surveillance of natural gas and oil export prices and reviewed and analyzed numerous agreements and contracts for the sale, purchase and transportation of oil and gas.

Environment

Protection of the environment is a major concern of the Board in considering applications for certificates, licences and orders. Its inquiries not only reflect public concern about the quality of the environment, but keep pace with the growing body of scientific knowledge on effective control measures.

The Board has taken a multi-disciplinary approach in dealing with environmental matters. A group of environmental specialists with varying backgrounds has been added to the staff. This group works closely with those federal and provincial authorities responsible for environmental protection.

In considering applications, the Board ensures that both the construction and operation of physical facilities meet the environmental requirements and standards of federal and provincial agencies.

The environmental requirements of the Board have been made known by amendments to its Rules of Practice and Procedure and Regulations, as well as during public hearings of specific applications. Environmental requirements for the export of power and for gas pipelines are already included in the Regulations. These amendments require applicants to submit to the Board an assessment of the probable environmental impact of the proposed project and must include a description of the existing environment, together with detailed proposals of the measures to be taken for its protection.

Environmental guidelines for applicants for certificates for the construction and operation of international power lines were issued to all electrical companies subject to the National Energy Board Act. Environmental guidelines for pipeline applicants were issued on a case by case basis; complete environmental guidelines will be issued in the near future to all pipeline companies subject to the Act.

During 1974, 15 major pipeline and power export applications were reviewed to assess their environmental impact, out of which eight certificates and orders were conditioned on environmental requirements. These projects covering all parts of Canada involved the consideration of a wide variety of Canada's biophysical settings, interrelationships and interactions. Land use, engineering practices and measures to protect terrain, wildlife and fish as well as air and water quality and noise levels were some of the major concerns of the Board in reviewing these applications.

The Board also inquired into environmental questions concerning oil and gas supply, demand and deliverability in Canada. Environmental aspects of several applications before the Board are being assessed.

Organization of the National Energy Board

Supporting the Board Members, appointed by the Governor in Council, is a staff of 311 men and women, the majority of them specialists and professionals in the energy field. They are organized into seven principal branches. The seven Branches and their responsibilities are:

Administration Branch

Provides administrative support to the Board, including personnel, financial control, public information services, library operation, computer systems, office services and supplies.

Economics Branch

Responsible for energy statistics including supply/demand balances for all sources of energy, short and long term energy forecasts, analysis of market requirements in respect of applications, administration of the propane/butane export allocation program, and economic analysis of major energy projects and of the energy industries.

Electrical Engineering Branch

Advises the Board on all matters concerning electric power including regulatory and load studies, construction of international power lines and export of power and energy, planning of electric power systems and power generation.

Engineering Branch

Advises the Board on matters of oil and gas exploration, drilling and production. Forecasts trends in oil and gas supply from conventional, oil sands and synthetic sources. Independently calculates the reserves and deliverability of gas and producibility of oil. Responsible for pipeline design, construction, operation, right of way, and public safety. Carries out inspection, engineering and economic studies in relation to pipelines and associated facilities. Analyzes and makes recommendations on engineering aspects of construction of oil and gas pipelines and gas processing plants. Responsible for providing environmental advice and assessments respecting the construction and operation of pipelines and power lines and exportation of oil, gas and electric power and other related activities. The Calgary office of the Engineering Branch is currently composed of six geologists, five reservoir engineers, an engineering technologist and an office assistant.

The staff of the Calgary office are engaged in the actual pool by pool calculation of gas and oil reserves.

Financial Branch

Provides advice on rates and accounting matters in respect of regulatory and advisory functions. Analyzes and recommends on the financial aspects of construction of oil and gas pipelines, including financial and economic feasibility, methods of financing, financial structure of applicants and Canadian content of projects. Examines the rate structure of pipeline companies. Organizes and conducts field audits of pipeline companies and licensed exporters of oil and gas. Develops standard accounting systems for pipeline companies.

Law Branch

Advises the Board on its statutory powers, prepares regulations and rules of procedure, prepares draft amendments to the Act, examines witnesses at hearings, assists in the preparation and review of submissions to Governor in Council, Reasons for Decision, Orders and Certificates and conducts litigation for and on behalf of the Board.

Oil Policy Branch

Acts as the Board's principal staff source of information and advice on national and international matters affecting oil policy. Provides the staff advice for the Board's control over licensed exports and provides appraisals regarding export prices for crude oil and equivalent hydrocarbons and petroleum products.

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B. P. Leakey Assistant Director,
Evaluation
W. R. Porter Assistant Director,
Operations

APPENDICES TO THE
1974
ANNUAL REPORT
OF THE
NATIONAL ENERGY BOARD

Carroll

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NDIX I

ates of Public Convenience and Necessity issued during 1974*

Applicant	Facilities	Estimated Cost	Heard	Issued	Certificate No.
<i>Gas Pipelines</i>					
coast Transmis- Company ted	About 60 miles of 10-in., 12-in., 16-in. and 20-in. diam. pipelines and connected works in the Peace River District, B.C.	\$15,370,000	Vancouver 5-6 Feb. 1974	26 Feb. 1974	GC-51
sCanada Pipe- s Limited	a) About 15.5 miles of 42-in. diam. pipelines and con- nected works in Deer Forks and Miry Creek, Sask. and in Blanshard, Man. b) About 43 miles of 24-in. diam. pipelines and connected works in southeastern Ont.	\$16,041,900	Ottawa 7-8-9-13-14 Aug. 1974	23 Aug. 1974	GC-52 As amended
<i>lines</i>					
in Pipe Lines	a) About 1,220 miles of 10.75- in. and 12.75-in. diam. pipe- line from Fort Saskatchewan, Alta. to Elmore, Sask. b) About 95 miles of 8.625-in. diam. pipeline from Empress, Alta. to Kerrobert, Sask. c) About 90 miles of 10.75 in. diam. pipeline from the Canada-U.S. border at Windsor, Ont. to Sarnia, Ont.	\$68,670,000	11-14 Jan. 1972 17-21 Jan. 1972 4-6 July 1973 9-12 July 1973 17-20 July 1973 23-27 July 1973 30-31 July 1973 1-5 Aug. 1973 7-8 Aug. 1973 13-17 Aug. 1973 5-7 Sept. 1973	22 May 1974 26 Sept. 1974	OC-29 As Amended by Order No. MO-45-74

Section 44 of NEB ACT

APPENDIX II

Exemption Orders Issued During 1974 Class "B" Construction*

Natural Gas Pipelines

(1) Westcoast Transmission Company Limited

- a) About 11.4 miles of additional 10.750 in. diam. pipeline, and connected works, known as "East Kotcho Line", in British Columbia. Estimated cost \$2,006,000. Order No. XG-1-74, dated 3 January, 1974.
- b) About 0.8 of a mile of additional 36 in. diam. pipeline, and connected works in British Columbia. Estimated cost \$1,800,000. Order No. XG-2-74, dated 4 February, 1974, as amended.
- c) A 24,000 h.p. compressor and a 15,500 h.p. compressor and connected works in B.C. Estimated cost \$5,012,000. Order No. XG-3-74, dated 2 May, 1974, as amended.
- d) A 2,000 h.p. compressor and connected works, Laprise Creek Field Compressor Station' in B.C. Estimated cost \$1,388,000. Order No. XG-4-74, dated 2 May, 1974, as amended.
- e) About 0.5 of a mile of additional 3.5-in. diam. pipeline, in B.C. Estimated cost \$41,900. Order No. XG-5-74, dated 2 May, 1974.
- f) About 2.34 miles of additional 6.625-in. diam. pipeline in B.C. Estimated cost \$254,000. Order No. XG-7-74, dated 16 May, 1974, as amended.
- g) About 23.61 miles of additional 10.750-in., 6.625-in. and 3.5-in. diam. pipeline in B.C. Estimated cost \$2,303,000. Order No. XG-8-74, dated 23 May, 1974, as amended.
- h) Compressor station, known as 'Siphon Compressor Station', of two 2,000 h.p. units and connected works in B.C. Estimated cost \$4,395,000. Order No. XG-9-74, dated 8 August, 1974, as amended.
- i) Compressor Station, known as 'Boundary Lake Compressor Station', of two 2,000 h.p. units and connected works in B.C. Estimated cost \$3,645,000. Order No. XG-11-74, dated 19 September, 1974.
- j) About 1.2 miles of additional 36-in. diam. pipeline and connected works in B.C. Estimated cost \$3,054,800. Order No. XG-12-74, dated 14 November, 1974.

(2) TransCanada PipeLines Limited

- a) About 5 miles of additional 24-in. diam. pipeline and connected works in Ontario. Estimated cost \$1,001,600. Order No. XG-6-74, dated 16 May, 1974.
- b) Meter station known as 'Long Sault Meter Station' and connected works in Ontario. Estimated cost \$30,110. Order No. XG-13-74, dated 21 November, 1974.

(3) Peace River Transmission Company Limited, about 3.5 miles of additional 6.625-in. diam. pipeline and connected works in B.C. Estimated cost \$147,000. Order No. XG-10-74, dated 22 August, 1974, as amended.

Oil Pipelines

(1) Trans-Northern Pipe Line Company.

- a) Interconnecting valves, fittings and piping and works connected at North Toronto Pump and Meter Station and 'Cummer Junction' sites in Ontario. Estimated cost \$9,000. Order No. XO-1-74, dated 11 April, 1974.
- b) About 13.7 miles of additional 20-in. and 10-in. diam. pipeline, certain manifold piping and connected works, known as 'Port Credit Junction' as well as piping modifications at 'Oakville Pump and Meter Station', 'Clarkson Junction', 'Port Credit Pump Station' and 'Toronto Airport Junction' sites in Ontario. Estimated cost \$3,5000,000. Order No. XO-3-74, dated 13 June, 1974, as amended.

(2) Interprovincial Pipe Line Limited

- a) Pump station modifications and additional main line valves in 'Line 2 System' in Alberta, Saskatchewan and Manitoba; Cross over piping on 'Line 2' and 'Line 3' in Alberta, Saskatchewan and Manitoba;
Additional electric pumping facilities 'Line 2' station (one 2,500 h.p. pumping unit at 'Cactus Lake Pump Station' site, two 2,500 h.p. pumping units at 'Odessa Pump Station' site, and two 2,500 h.p. pumping units and connected works at 'Langbank Pump Station' site in Saskatchewan);

*Construction authorized by a specific exemption order under Section 49, issued at the discretion of the Board.

PENDIX II – Concluded

Exemption Orders Issued During 1974 Class “B” Construction*

- Additional electric booster pumping facilities (one 1,500 h.p. unit at ‘Edmonton Pump Station and Terminal’ site in Alberta and 800 h.p. and 125 h.p. units and connected works at ‘Cromer Pump Station and Terminal’ site in Manitoba).
Estimated cost \$6,825,000. Order No. XO-2-74, dated 11 April, 1974, as amended.
- b) About 2.3 miles of additional 20-in. diam. pipeline and certain pumping facilities and connected works in Ontario. Estimated cost \$1,900,000. Order No. XO-5-74, dated 12 December, 1974.
- (3) Dome Petroleum Limited and Amoco Canada Petroleum Company Ltd. About 1,200 ft. of additional 8.625-in. diam. pipeline, and connected works in Ontario. Estimated cost \$62,000. Order No. XO-4-74, dated 22 August 22, 1974.
- (5) ICG Transmission Limited, for facilities to be added to its pipeline in Manitoba and Ontario. Estimated cost \$14,300. Order No. XGM-5-74, dated 23 May, 1974.
- (6) Minell Pipeline Ltd., for facilities to be added to its pipeline in Saskatchewan and Manitoba. Estimated cost \$1,100. Order No. XGM-6-74, dated 29 August, 1974.

Oil Pipelines

- (1) Petroleum Transmission Company, for facilities to be added to its pipeline in Alberta, Saskatchewan and Manitoba. Estimated cost \$15,000. Order No. XOM-1-74, dated 31 January, 1974.
- (2) Westspur Pipe Line Company, for facilities to be added to its pipeline in Saskatchewan and Manitoba. Estimated cost \$114,650. Order No. XOM-2-74, dated 28 March, 1974.
- (3) Trans Mountain Pipe Line Company Ltd., for facilities to be added to its pipeline in Alberta and British Columbia. Estimated cost \$1,928,850. Order No. XOM-3-74, dated 28 March, 1974.
- (4) Montreal Pipe Line Company, for facilities to be added to its pipeline in Quebec. Estimated cost \$697,880. Order No. XOM-4-74, dated 13 June, 1974, as amended.
- (5) Trans-Northern Pipe Line Company, for facilities to be added to its pipeline in Quebec and Ontario. Estimated cost \$611,000. Order No. XOM-5-74, dated 11 April, 1974.
- (6) Interprovincial Pipe Line Limited, for facilities to be added to its pipeline in Alberta, Saskatchewan, Manitoba and Ontario. Estimated cost \$1,977,800. Order No. XOM-6-74, dated 13 June, 1974.
- (7) Cochin Pipe Lines Ltd., for facilities to be added to its pipeline in Alberta, Saskatchewan and Ontario. Estimated cost \$27,500. Order No. XOM-7-74, dated 13 June, 1974.

Exemption Orders Issued During 1974 Class “C” Construction*

Natural Gas Pipelines

- (1) Consolidated Pipe Lines Company, for facilities to be added to its pipeline in Saskatchewan. Estimated cost \$50,380. Order No. XGM-1-74, dated 14 March, 1974.
- (2) Alberta Natural Gas Company Ltd, for facilities to be added to its pipeline in Alberta and British Columbia. Estimated cost \$327,557. Order No. XGM-2-74, dated 4 April, 1974.
- (3) Westcoast Transmission Company Limited, for facilities to be added to its pipeline in Alberta, and British Columbia, and the Yukon and Northwest Territories. Estimated cost \$8,200,531. Order No. XGM-3-74, dated 25 April, 1974.
- (4) TransCanada PipeLines Limited, for facilities to be added to its pipeline in Alberta, Saskatchewan, Manitoba, Ontario and Quebec. Estimated cost \$21,036,736. Order No. XGM-4-74, dated 23 May, 1974.

APPENDIX III

New Licences and Orders to Export Natural Gas, Ethane and Propane—1974

Licences — Éthane Export — Section 82

Applicant	Licence Number
Licence to export from Elmore, Sask. up to 14.2 million barrels in 1975, 14.1 million in 1976, 14 million in 1977, 13.9 million in 1978, 13 million in 1979 and 9.9 million in 1980. Issued May 22, 1974.	

1. Dome Petroleum Limited	GL-47
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Orders Amending Existing Natural Gas Export Licences — Section 17

Applicant	Order Number
The following provide that the prices to be received by the Licensee shall be not less than those specified in the precedent agreement referred to in the amending order. Orders dated Jan. 23, 1974.	

2. TransCanada PipeLines Limited	AO-3-GL-1 AO-5-GL-18 AO-7-GL-20
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Amendments establishing a new price below which gas exported may not be sold or delivered after January 1, 1975. Orders dated Oct. 8, 1974.

3. TransCanada PipeLines Limited	AO-4-GL-1 AO-6-GL-18 AO-3-GL-19 AO-8-GL-20 AO-2-GL-37 AO-2-GL-38 AO-2-GL-39 AO-1-GL-43
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4. Alberta and Southern Gas Co. Ltd.	AO-4-GL-3 AO-2-GL-16 AO-3-GL-24 AO-1-GL-35
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5. Westcoast Transmission Company Limited	AO-5-GL-4 AO-3-GL-41 (effective Nov. 1, 1974)
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6. Canadian — Montana Pipe Line Company	AO-4-GL-5 AO-2-GL-17 AO-5-GL-25 AO-1-GL-36
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7. Niagara Gas Transmission Limited	AO-8-GL-6
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8. ICG Transmission Limited	AO-4-GL-28 AO-4-GL-29
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Amendments allowing the Licensee to retain the cost of compressor fuel and losses for gas that is imported into Canada under Licences GL-21 and GL-42 to cover its additional costs of transportation in the U.S.A. Orders dated Nov. 19, 1974.

9. TransCanada PipeLine Limited	AO-9-GL-20 AO-3-GL-37 AO-2-GL-43
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Amendment changing the daily and annual export quantities but not the total quantity of gas authorized for export. Order dated May 7, 1974.

10. Canadian-Montana Pipe Line Company	AO-4-GL-25
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Amendment providing for additional daily volumes that may be exported. Orders dated May 30, 1974.

11. ICG Transmission Limited	AO-3-GL-29 AO-3-GL-28
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Amendment providing for additional daily volumes that may be exported and imported. Order dated May 30, 1974.

12. ICG Transmission Limited	AO-2-GL-30
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Amendment extending the period to Oct. 31, 1975 during which gas may be delivered at Kingsgate, B.C. Order dated July 1974.

13. Westcoast Transmission Company Limited	AO-2-GL-4
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Orders Amending Propane Export Licences — Section 17

Amendments authorizing additional point of exportation near Elmore, Sask., and additional point of importation near Windsor, Ont.; permitting the exportation of additional volumes of propane. Order dated May 22, 1974.

14. Dome Petroleum Limited	AO-4-GL-31
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Amendment authorizing a further point of exportation near Windsor, Ont. Order dated Nov. 26, 1974.

15. PanCanadian Gas Products Ltd.	AO-3-GL-34
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Orders Amending Ethane Export Licences — Section 17

Amendment varying the annual volumes of ethane authorized for import and export. Order dated Feb. 26, 1974.

16. Dome Petroleum Ltd.	AO-1-GL-45
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Amendment permitting ethane export near Sarnia, Ont. which has been imported into Canada at Sarnia, and also permitting the import of this same ethane near Windsor, Ont. Order dated Nov. 30, 1974.

17. Dome Petroleum Ltd.	AO-2-GL-45
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Amendments changing the commencement date of Licence term. Also rectifying figures for export quantities on basis of thermal content (from 2.95 MM BTU's/Bbl. to 2.77 MM BTU's/Bbl.).

18. Dome Petroleum Ltd.	AO-1-GL-47
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Orders — Natural Gas Export — Part VI Regulations — Section 6B

Order authorizing the export from Coutts, Alta. of 5 MMcf annually, with a maximum of 1 MMcf in any one month, from September 19, 1974 to June 30, 1982. Order dated Sept. 19, 1974.

19. Patrick T. Buckley	GO-1-74
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PENDIX IV

Existing Licences and Orders to Export Natural Gas, Propane and Ethane
(as of 31 December 1974)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum		
			From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)
Natural Gas							
TransCanada PipeLines Limited	GL-1(AO-4)	Emerson, Man.	11/ 4/60	14/ 5/81	223,000	74,000	1,410,000
Alberta & Southern Gas Co. Ltd.	GL-3(AO-4)	Kingsgate, B.C.	31/10/61	31/10/86	458,750	153,270	3,826,000
Westcoast Transmission Company Limited	GL-4(AO-5)	Kingsgate, B.C.	10/12/61	10/12/81	152,000	51,000	1,020,000
Canadian-Montana Pipe Line Company	GL-5(AO-4)	Cardston, Alta.	31/10/61	31/10/86	36,000	10,950	273,750
Niagara Gas Transmission Limited	GL-6(AO-8)	Cornwall, Ont.	7/ 9/62	30/ 6/87	23,000 ⁽¹⁾	5,520 ⁽¹⁾	121,190
Alberta & Southern Gas Co. Ltd.	GL-16(AO-2)	Kingsgate, B.C.	1/11/66 1/11/67	31/10/67 31/10/89	113,125 226,250	37,415 74,830	1,614,000
Canadian-Montana Pipe Line Company	GL-17(AO-2)	Cardston, Alta.	1/11/66 1/11/67	31/10/67 31/10/89	12,000 24,000	3,650 7,300	164,250
TransCanada PipeLines Limited	GL-18(AO-6)	Emerson, Man.	22/11/65 1/11/66	31/10/68 31/10/89	25,000 143,000	8,000 52,300	1,200,000
TransCanada PipeLines Limited	GL-19(AO-3)	Philipsburg, Que.	1/11/65	31/10/89	17,700	6,500	108,000
TransCanada PipeLines Limited	GL-20(AO-9)	Emerson, Man.	21/11/68	31/10/91	87,600	32,100	765,000
TransCanada PipeLines Limited	GL-21(AO-5) ⁽³⁾	Emerson, Man.	5/11/68	31/10/91	N/S	247,782	6,000,000
Alberta & Southern Gas Co. Ltd.	GL-24(AO-3)	Kingsgate, B.C.	1/11/68 1/11/69 1/11/91	31/10/69 31/10/91 31/10/93	121,000 236,000 135,400	38,900 77,900 44,600	1,841,900
Canadian-Montana Pipe Line Co.	GL-25(AO-5)	Cardston, Alta. Aden, Alta.	1/11/68 1/11/69 1/11/91 27/ 3/73 ⁽⁴⁾ 14/ 5/74 ⁽⁵⁾	31/10/69 31/10/91 31/10/93 14/ 5/74 14/ 5/75	12,000 24,000 13,800 99,460 99,460	3,650 7,300 4,200 19,892 19,892	172,650
ICG Transmission Limited	GL-28(AO-4)	Sprague, Man.	1/11/70	31/10/95	2,834	337	8,084
ICG Transmission Limited	GL-29(AO-4)	Fort Frances, Ont.	1/11/70	31/10/95	32,323	7,715	192,820
ICG Transmission Limited	GL-30(AO-2) ⁽⁶⁾	Sprague, Man.	1/11/70 9/ 1/73	31/10/95 31/12/73	46,662 10,296	12,144 N/S	299,990 305
Alberta & Southern Gas Co. Ltd.	GL-35(AO-1)	Kingsgate, B.C.	1/11/70	31/10/85	205,000	67,500	1,012,500
Canadian-Montana Pipe Line Co.	GL-36(AO-1)	Cardston, Alta.	1/11/70	31/10/85	12,000	3,650	54,750
TransCanada PipeLines Limited	GL-37(AO-3)	Emerson, Man.	1/11/70	31/10/90	195,800	71,663	1,433,256
TransCanada PipeLines Limited	GL-38(AO-2)	Emerson, Man.	1/11/70	31/10/90	50,000	18,300	366,000
TransCanada PipeLines Limited	GL-39(AO-2)	Emerson, Man.	1/11/70	31/10/90	7,200	2,635	52,704
Westcoast Transmission Company Limited	GL-41(AO-3)	Huntingdon, B.C.	1/11/71 1/11/72	31/10/72 31/10/89	733,338 809,200	254,982 281,359	5,042,860
TransCanada PipeLines Limited	GL-42 ⁽³⁾	Emerson, Man.	15/ 4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	2,129,232
TransCanada PipeLines Limited	GL-43(AO-2)	Emerson, Man.	1/11/71	31/10/91	N/S	17,000	340,000
Consolidated Natural Gas Limited	GL-44 ⁽⁷⁾	Emerson, Man.	15/ 3/72	31/10/92	150,000	45,000	669,000
Patrick T. Buckley	GO-1-74	Coutts, Alta.	19/ 9/74	30/ 6/82 (1 MMcf per month)	N/S	5	N/S

Footnotes at end of this Appendix.

APPENDIX IV — Continued

Subsisting Licences and Orders to Export Natural Gas, Propane and Ethane (as at 31 December 1974)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes	
			From	To	Column A (Annual Barrels)	Column (Annual Ba
B. Propane						
1. Dome Petroleum Limited	GL-31(AO-4) (8)	Gretna, Man., Elmore, Sask., Sarnia, Ont. and Windsor, Ont.	5/6/73 ⁽⁹⁾	31/12/73	6,287,500	5,827,500
			1/1/74	31/12/74	5,991,500	5,481,500
			1/1/75	31/12/75	5,913,000	5,338,000
			1/1/76	31/12/76	5,751,500	5,121,500
			1/1/77	31/12/77	5,582,500	4,887,500
			1/1/78	31/12/78	5,457,000	839,500
			1/1/79	31/12/79	5,357,000	839,500
			1/1/80	31/12/80	5,263,000	839,500
			1/1/81	31/12/81	5,114,000	839,500
			1/1/82	31/12/82	4,948,500	839,500
			1/1/83	31/12/83	4,665,500	839,500
			1/1/84	31/12/84	4,316,500	839,500
			1/1/85	31/12/85	3,898,000	839,500
			1/1/86	31/12/86	3,362,000	839,500
			1/1/87	31/12/87	2,930,500	906,000
			1/1/88	31/12/88	2,489,000	1,216,000
			1/1/89	31/12/89	2,078,000	1,241,000
			1/1/90	31/12/90	1,690,000	1,065,000
			1/1/91	31/12/91	1,396,000	1,045,000
			2. Amoco Canada Petroleum Company Ltd.	GL-32(AO-2) (10)	Gretna, Man., Sarnia, Ont., and Windsor, Ont.	1/1/92	31/12/92	1,339,500	1,040,000
1/1/93	31/12/93	1,233,500				1,025,000
1/1/94	31/12/94	1,011,000				655,000
1/1/95	31/12/95	294,000				0
5/6/73 ⁽¹¹⁾	31/12/73	3,872,500				3,589,500
1/1/74	31/12/74	3,579,000				3,274,000
1/1/75	31/12/75	3,533,000				3,189,000
1/1/76	31/12/76	3,421,500				3,046,500
1/1/77	31/12/77	3,287,000				2,878,000
1/1/78	31/12/78	3,197,500				584,000
1/1/79	31/12/79	3,133,500	584,000			
1/1/80	31/12/80	3,077,000	584,000			
1/1/81	31/12/81	2,987,500	584,000			
1/1/82	31/12/82	2,943,500	584,000			
1/1/83	31/12/83	2,832,500	584,000			
1/1/84	31/12/84	2,610,000	584,000			
1/1/85	31/12/85	2,401,500	584,000			
1/1/86	31/12/86	2,182,500	584,000			
1/1/87	31/12/87	2,024,000	584,000			
1/1/88	31/12/88	1,838,000	584,000			
1/1/89	31/12/89	1,690,000	584,000			
1/1/90	31/12/90	1,546,000	584,000			
1/1/91	31/12/91	1,396,000	584,000			
1/1/92	31/12/92	1,339,500	584,000			
1/1/93	31/12/93	1,233,500	584,000			
1/1/94	31/12/94	1,011,000	486,400			
1/1/95	31/12/95	294,000	0			

Footnotes at end of this Appendix.

ENDIX IV – Continued

Existing Licences and Orders to Export Natural Gas, Propane and Ethane
as of 31 December 1974)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes	
			From	To	Column A (Annual Barrels)	Column B (Annual Barrels)
Canadian Gas Products Ltd.	GL-34(AO-3) ⁽¹²⁾	Gretna, Man., Sarnia or Windsor, Ont.	5/6/73 ⁽¹³⁾	31/12/73	2,415,000	2,238,000
			1/1/74	31/12/74	2,412,500	2,207,500
			1/1/75	31/12/75	2,380,000	2,149,000
			1/1/76	31/12/76	2,330,000	2,075,000
			1/1/77	31/12/77	2,295,500	2,009,500
			1/1/78	31/12/78	2,259,500	401,500
			1/1/79	31/12/79	2,223,500	401,500
			1/1/80	31/12/80	2,186,000	401,500
			1/1/81	31/12/81	2,126,500	401,500
			1/1/82	31/12/82	2,005,000	401,500
			1/1/83	31/12/83	1,833,000	401,500
			1/1/84	31/12/84	1,706,500	401,500
			1/1/85	31/12/85	1,496,500	401,500
			1/1/86	31/12/86	1,179,500	335,000
			1/1/87	31/12/87	906,500	25,000
			1/1/88	31/12/88	651,000	0
			1/1/89	31/12/89	388,000	0
			1/1/90	31/12/90	144,000	0
Dome Petroleum Limited	GL-46(AO-2) ⁽¹⁴⁾	Windsor, Ont. Sarnia, Ont.				(Barrels)
			1/4/74	31/ 3/75	1,930,000	
			1/4/75	31/ 3/76	2,560,000	
			1/4/76	31/ 3/77	2,990,000	
			1/4/77	31/ 3/78	3,930,000	
			1/4/78	31/ 3/79	3,900,000	
			1/4/79	31/ 3/80	3,790,000	
			1/4/80	31/ 3/81	3,450,000	
			1/4/81	31/ 3/82	2,950,000	
Dome Petroleum Limited	GL-45(AO-2) ⁽¹⁵⁾	Windsor, Ont.	1/ 4/74	31/ 3/75	1,830,000	
			1/ 4/75	31/ 3/76	1,830,000	
			1/ 4/76	31/ 3/77	1,830,000	
			1/ 4/77	31/ 3/78	1,940,000	
			1/ 4/78	31/ 3/79	1,970,000	
			1/ 4/79	31/ 3/80	2,010,000	
			1/ 4/80	31/ 3/81	2,080,000	
			1/ 4/81	31/ 3/82	2,190,000	
			1/ 4/82	31/ 3/83	2,230,000	
Dome Petroleum Limited	GL-47(AO-1)	Elmore, Sask.	1/ 4/83	31/ 3/84	2,090,000	
			1/11/76 ⁽¹⁶⁾	31/12/76		(16)
			1/ 1/77	31/12/77	14,000,000	
			1/ 1/78	31/12/78	13,900,000	
			1/ 1/79	31/12/79	13,000,000	
			1/ 1/80	31/12/80	9,900,000	
			1/ 1/81	31/12/81	8,900,000	
			1/ 1/82	31/12/82	7,500,000	
			1/ 1/83	31/12/83	2,900,000	

Footnotes at end of this Appendix.

APPENDIX IV – Concluded

Subsisting Licences and Orders to Export Natural Gas, Propane and Ethane (as at 31 December 1974)

Footnotes

N/S Not specified

* Liquefied natural gas.

- (1) There was an exception for the period 23/12/70 to 31/12/71 when exports of 30,000 Mcf daily and 6,700 Mcf were authorized.
- (2) Interruptible.
- (3) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.
- (4) This export actually commenced on the day when the total quantity of gas authorized by Licence No. GL-8 was exported (approximately June 1973).
- (5) This amendment stipulates a maximum daily quantity of 27,000 Mcf or 450,000 Mcf in any calendar month during the period between May 14, 1974, and the commencement of export authorized for the period May 14, 1974 to May 14, 1975.
- (6) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
- (7) This licence authorizes an export near Emerson, Manitoba. The quantity of gas exported under the authority of this licence shall be equal to the quantities of gas which the Licence imports pursuant to Licence GLI-5.
- (8) This licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-26 with Licence No. GL-31 whereby certain quantities of the propane exported near Gretna, Manitoba and Elmore, Sask. is imported into and exported from Canada near Sarnia and Windsor, Ontario. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import that volume of propane authorized for export during that period as provided by the Licence. The Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.
- (9) This period includes the volumes of propane exported and imported pursuant to Licences GL-26 and GL-31 during the part of 1973 prior to the day of issue of this order.
- (10) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-32. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.
- (11) This period includes the volumes of propane exported and imported pursuant to Licences GL-27 and GL-32 during the part of 1973 prior to the day of the issue of this order.
- (12) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.
- (13) This period includes the volumes of propane exported and imported pursuant to Licences GL-33 and GL-34 during the part of 1973 prior to the day of the issue of this order.
- (14) This is an import-export licence whereby no propane may be exported at Windsor, Ontario, that has not been imported at Sarnia, Ontario. Notwithstanding the above export and import points, the Licensee may export propane at Sarnia, Ontario, and import propane at Windsor, Ontario during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.
- (15) This licence authorizes an export near Windsor, Ontario. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the Licensee imports near Sarnia, Ontario. Notwithstanding the above export and import points, the Licensee may export ethane at Sarnia, Ontario and import ethane at Windsor, Ontario during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.
- (16) This Licence provides for two commencement dates, namely, the first delivery of ethane into Cochin Pipe Lines Ltd. or November 1, 1976, whichever is earlier. The quantity of ethane that may be exported in the period in 1976 ending on December 31, 1976, shall not exceed that quantity which is the same percentages of 14,100,000 barrels, that the number of days between the date of commencement of the licence term and December 31, 1976 is to 365 days.

Exports of Natural Gas

Exporter and Licence/Order	Maximum			(MMcf)						Total Authorized Exports	Remaining (1) Under Licences
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/69	1970	1971	1972	1973	1974			
1. TransCanada PipeLines Limited GL-1 (AO-4)	223,000	74,000	638,366	73,741	74,057	73,904	73,687	74,390	1,008,145	1,410,000	401,855
2. TransCanada PipeLines Limited GL-2 (AO-7)	96,900(2)	20,663(2)	11,554	28,019	19,170	3,672	—	—	62,415	N/S	N/A
3. Alberta & Southern Gas Co. Ltd. GL-3 (AC-4)(3)	458,750	153,270	1,200,793	166,624	167,484	167,436	157,353	138,837	1,998,527	3,826,000	1,827,473
4. Westcoast Transmission Company Limited GL-4 (AO-5)	152,000	51,000	352,614	49,159	51,215	50,945	50,145	46,196	600,274	1,020,000	419,726
5. Canadian-Montana Pipe Line Company GL-5 (AO-4)(3)	36,000	10,950	87,825	10,992	10,792	12,068	11,525	11,032	144,234	273,750	129,516
6. Niagara Gas Transmission Limited GL-6 (AO-8)	23,000(4)	5,520	24,286	5,495	5,946	5,899	5,547	5,556	52,729	121,190	68,461
7. Patrick T. Buckley GL-7 (AO-1)	(5)	10	22	—	—	—	—	22	N/S	N/A	N/A
8. Canadian-Montana Pipe Line Company GL-8 (AO-1)	99,460	19,892	162,326(6)	17,429	16,021	16,391	7,833	—	220,000	220,000	N/A
9. Alberta & Southern Gas Co. Ltd. GL-16 (AO-2)(3)	113,125	37,415	176,923	77,058	65,517	74,459	77,730	74,162	545,849	1,614,000	1,068,151
01/11/66 — 31/10/67	226,250	74,830		—	—	—	—	—			
01/11/67 — 31/10/89	—	—	—	—	—	—	—	—	—	—	—
10. Canadian-Montana Pipe Line Company GL-17 (AO-2)(3)	12,000	3,650	18,216	7,326	7,195	8,054	7,674	7,355	55,820	164,250	108,430
01/11/66 — 31/10/67	24,000	7,300		—	—	—	—	—			
01/11/67 — 31/10/89	—	—	—	—	—	—	—	—	—	—	—
11. TransCanada PipeLines Limited GL-18 (AO-6)	25,000	8,000	99,204	47,547	42,855	42,578	42,615	42,778	317,577	1,200,000	882,423
22/11/65 — 31/10/68(7)	143,000	52,300		—	—	—	—	—			
01/11/66 — 31/10/89	—	—	—	—	—	—	—	—	—	—	—
12. TransCanada PipeLines Limited GL-19 (AO-3)	17,700	6,500	4,430	2,532	2,820	3,745	3,912	4,891	22,330	108,000	85,670
13. TransCanada PipeLines Limited GL-20 (AO-9)	87,600	32,100	20,968	36,990	30,492	31,768	31,974	31,974	184,166	765,000	580,834
14. TransCanada PipeLines Limited GL-21 (AO-5)(8)	N/S	247,782	179,355	230,392	222,465	221,055	227,878	214,189	1,295,334	6,000,000	4,704,666
15. TransCanada PipeLines Limited GL-22 (AO-4)	N/S	N/S	2,592	—	—	—	—	—	2,592	3,000	N/A
16. Westcoast Transmission Company Limited PC1955-958 (AO-2)(9)	304,000	100,000	1,165,898	104,361	85,892	—	—	—	1,356,151	N/A	N/A
1955 — 31/12/65	303,450	N/S		—	—	—	—	—			
01/01/66 — 02/10/77	—	—	—	—	—	—	—	—	—	—	—
17. Westcoast Transmission Company Limited GL-23 (AO-7)(9)	101,150	36,920	130,113	69,737	57,262	—	—	—	257,112	N/A	N/A
01/11/66 — 31/10/67	101,150	24,579		—	—	—	—	—			
01/11/67 — 21/02/68	202,300	74,040	—	—	—	—	—	—	—	—	—
22/02/68 — 31/10/88	—	—	—	—	—	—	—	—	—	—	—

APPENDIX V — Continued

Exports of Natural Gas

Exporter and Licence/Order	Maximum		(MMcf)							Cumulative to 31/12/69	1970	1971	1972	1973	1974	Cumulative to 31/12/74 Exports	Total Authorized Under Licences	Remaining ⁽¹⁾ Under Licences
	Daily (Mcf)	Annual (MMcf)																
18. Alberta & Southern Gas Co. Ltd. GL-24 (AO-3)(3)																		
01/11/68 — 31/10/69	121,000	38,900																
01/11/69 — 31/10/91	236,000	77,900																
01/11/91 — 31/10/93	135,400	44,600								52,618	50,644	60,002	70,075	83,474	83,076	399,899	1,841,900	1,442,011
19. Canadian-Montana Pipe Line Company GL-25 (AO-5)(3)																		
01/11/68 — 31/10/69	12,000	3,650																
01/11/69 — 31/10/91	24,000	7,300																
01/11/91 — 31/10/93	13,800	4,200								4,283	6,572	7,195	8,054	19,190	26,048	71,342	172,650	101,308
26/06/73 — 14/05/75	99,460	19,892																
20. ICG Transmission Limited GL-28 (AO-4)	2,834	337									10	5	135	248	325	723	8,084	7,361
21. ICG Transmission Limited GL-29 (AO-4)(3)	32,323	7,715										7,109	8,027	7,650	7,448	30,234	192,820	162,586
22. ICG Transmission Limited GL-30 (AO-2)(10)	46,662	12,144									45	9,100	11,500	10,286	11,114	42,045	299,990	257,945
23. Alberta & Southern Gas Co. Ltd. GL-35 (AO-1)	205,000	67,500									10,155	61,000	71,920	68,804	61,652	273,531	1,012,500	738,969
24. Canadian-Montana Pipe Line Company GL-36 (AO-1)	12,000	3,650									241	3,445	4,023	3,841	3,677	15,227	54,750	39,523
25. TransCanada PipeLines Limited GL-37 (AO-3)	195,800	71,663									11,944	68,155	72,143	71,467	71,467	295,176	1,433,256	1,138,080
26. TransCanada PipeLines Limited GL-38 (AO-2)	50,000	18,300									2,232	18,250	18,300	18,250	18,250	75,382	366,000	290,618
27. TransCanada PipeLines Limited GL-39 (AO-2)	7,200	2,635									439	2,572	2,635	2,630	2,628	10,904	52,704	41,800
28. Westcoast Transmission Company Limited GL-40 (AO-1)(9)	75,863	27,770										2,560	—	—	—	2,560	N/A	N/A
29. Westcoast Transmission Company Limited GL-41 (AO-3)(9)	733,338	254,982										43,421	255,496	267,753	240,462	807,132	5,042,860	4,235,728
01/11/71 — 31/10/72	809,200	281,359																
30. TransCanada PipeLines Limited GL-42(8)																		
15/04/71 — 31/10/71	N/S	8,218										17,697	82,271	84,811	79,715	264,494	2,129,232	1,864,738
01/11/71 — 31/10/94	N/S	92,218																
31. TransCanada PipeLines Limited GL-43 (AO-2)												347	7,536	13,914	6,838	28,635	340,000	311,365
32. Consolidated Natural Gas Limited GL-44(12)																		
01/11/71 — 31/10/72	150,000	45,000											2,669	28,336	19,503	50,508	669,000	618,492
33. Patrick T. Buckley GO-1-68 Union Gas Company of Canada Limited EO-2-63	(11)	5														—	N/S	N/A
34. TransCanada PipeLines Limited EO-1-70	N/S	N/S								55						55	200	N/A
35. TransCanada PipeLines Limited EO-1-70	N/S	N/S									25					25	40	N/A

Exporter and Licence/Order	Maximum		(MMcf)										Total Authorized Exports	Remaining ⁽¹⁾ Under Licences
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/69	1970	1971	1972	1973	1974	Cumulative to 31/12/74					
37. TransCanada PipeLines Limited EO-2-72	N/S	N/A	—	—	—	120	—	—	120	N/S	N/A	N/A		
38. TransCanada PipeLines Limited EO-5-72	40,000	N/S	—	—	—	21	—	—	21	40	N/A	N/A		
39. Gaz Métropolitain, inc. EO-2-70 (AO-1)	N/A	N/A	—	151	—	—	—	—	151	N/A	N/A	N/A		
40. Gaz Métropolitain, inc. EO-3-70 (AO-1)	N/A	N/A	—	108	—	—	—	—	108	N/A	N/A	N/A		
41. Gaz Métropolitain, inc. EO-5-70 (AO-1)	N/A	N/A	—	374	240	—	—	—	614	N/A	N/A	N/A		
42. Gaz Métropolitain, inc. EO-8-70	N/A	N/A	—	57	93	—	—	—	150	N/A	N/A	N/A		
43. Gaz Métropolitain, inc. EO-2-71	N/A	N/A	—	—	491	—	—	—	491	N/A	N/A	N/A		
44. Gaz Métropolitain, inc. EO-3-71	N/A	N/A	—	—	537	—	—	—	537	N/A	N/A	N/A		
45. Gaz Métropolitain, inc. EO-4-71	N/A	N/A	—	—	84	—	—	—	84	N/A	N/A	N/A		
46. Gaz Métropolitain, inc. EO-7-72	N/A	N/A	—	—	—	247	—	—	247	N/A	N/A	N/A		
47. Gaz Métropolitain, inc. EO-1-73	N/A	N/A	—	—	—	—	9	—	9	N/A	N/A	N/A		
48. Gaz Métropolitain, inc. GO-2-73	N/A	N/A	—	—	—	—	708	—	708	(13)	N/A	N/A		
49. TransCanada Pipe Lines Limited EO-1-74	150	N/A	—	—	—	—	—	79	79	N/A	N/A	N/A		
50. TransCanada PipeLines Limited EO-2-74	N/S	N/A	—	—	—	—	—	67	67	N/A	N/A	N/A		
Gross Exports		Cumulative to 31/12/69	1970	1971	1972	1973	1974	Cumulative to 31/12/74						
Deduct Re-Export of Imports:		4,332,441	1,010,623	1,161,486	1,327,146	1,379,244	1,283,709	10,494,649						
Item 32, GL-44(12)		—	—	—	2,669	28,336	19,503	50,508						
Deduct Exports for Re-Import:														
Item 14, GL-21(8)		179,355	230,392	222,465	221,055	227,878	214,189	1,295,334						
Item 22, GL-30(10)		—	45	9,100	11,500	10,286	11,114	42,045						
Item 30, GL-42(8)		—	—	17,697	82,271	84,811	79,715	264,494						
Net Exports		4,153,086	780,186	912,224	1,009,651	1,027,933	959,188	8,842,268						

(1) It may not be possible to export total volumes remaining under licences due to restrictions on peak day and annual volumes.

(2) This licence authorizes an export of 30,000 MMcf in the period 01/11/70 to 31/03/72 and an additional export of 15,000 MMcf on an interruptible basis in the year commencing 1 November 1970.

(3) Volumes exceed licenced annual amounts due to make-up of accumulated shortfalls from previous years as authorized by licence.

(4) This licence authorizes daily and annual exports of 30,000 Mcf and 6,700 MMcf respectively during the period 23/12/70 to 31/12/71.

(5) 1,300 Mcf per month.

(6) Excludes exports prior to 01/09/60, effective commencement date of licence GL-8.

(7) Interruptible.

(8) This licence authorizes an export at Emerson, Manitoba for re-import at Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.

(9) On the day that first delivery of gas was made under licence GL-51, licences PC1955-958, GL-23 and GL-40 were revoked.

(10) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(11) 1,000 Mcf per month.

(12) This licence authorizes the export at Emerson, Manitoba at those volumes imported into Canada pursuant to licence GLI-5.

(13) This licence authorizes an export of 9,167,000 U.S. gallons.

N/S Not specified. N/A Not applicable. — Amount too small to be expressed.

APPENDIX VI

New Licences and Orders to Import Natural Gas, Propane and Ethane Issued during 1974

A. Licences – Natural Gas Import – Section 82

None Issued

B. Licences – Propane Import – Section 82

None Issued

C. Licences – Ethane Import – Section 82

None Issued

D. Orders Amending Existing Natural Gas Import Licences – Section 17

Applicant	Order Number	Date of Issue	Comments
1. ICG Transmission Limited	AO-2-GL-30	30/ 5/74	(i) Amendment providing for additional daily volumes of gas to be exported and imported. (Increased to a maximum of 46,662 Mcf in any one day from 36,366 Mcf in any one day)

E. Orders Amending Existing Propane Import Licences – Section 17

1. Dome Petroleum Limited	AO-4-GL-31	22/ 5/74	(i) Amendment authorizing an additional point of exportation near Elmore, Saskatchewan, and an additional point of importation near Windsor, Ontario. (ii) Amendment permitting the exportation of additional volumes of propane.
2. Pan Canadian Gas Products Ltd.	AO-3-GL-34	26/11/74	(i) Amendment authorizing a further point of exportation near Windsor, Ontario.
3. Dome Petroleum Limited	AO-1-GL-46	26/ 2/74	(i) Amendment varying the annual volumes of propane imported and exported pursuant to this Licence.
4. Dome Petroleum Limited	AO-2-GL-46	30/ 7/74	(i) Amendment permitting the Licensee to export propane near Sarnia, Ontario, which propane has been imported into Canada at the same place. (ii) Amendment also permitting the Licensee to import this same propane near Windsor, Ontario.

Applicant	Order Number	Date of Issue	Point of Import	Term		Import Volumes
				From	To	
F. Orders – Natural Gas Import – Part VI Regulations – Section 17						
1. TransCanada PipeLines Ltd.	EO-1-74(1)	19/4/74	Niagara Falls, Ont.	22/4/74	24/4/74	150,000 Mcf/Day (for 3 days)
2. TransCanada PipeLines Ltd.	EO-2-74(2)	6/6/74	Niagara Falls, Ont.	6/6/74	7/6/74	70,000 Mcf (for 2 days)

G. Orders Amending Existing Natural Gas Import Orders – Section 17

None Issued

- (1) The Licensee shall return the quantity of gas imported by exporting such gas to Tennessee Gas Pipeline Company during the period from the day of issue of this order to June 30, 1974.
- (2) The Licensee shall return the quantity of gas imported by exporting such gas to Tennessee Gas Pipeline Company during the period from the day of issue of this order to July 30, 1974.

Subsisting Licences and Orders to Import Natural Gas, Propane, and Ethane
As at 31 December 1974

As at 31 December 1974

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Import Volumes		
			From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)
A. Natural Gas							
1. Union Gas Company of Canada, Limited	GLI-1	Ojibway, Ont.	1/ 2/65	5/11/76	55,000	15,500	170,000
2. Border Utilities Ltd.	GO-2-66(AO-1)	Coutts, Alta.	2/ 6/66	14/ 9/85	1,000	N/S	N/S
3. Canadian Western Natural Gas Company Limited	GO-6-66(AO-1)	Coutts, Alta.	22/ 9/66	14/ 9/85	1,000	N/S	N/S
4. TransCanada PipeLines Limited	GL-21(AO-5)(1)	(Sault Ste. Marie, and Sarnia, Ont.)	5/11/68	31/10/91	N/S	247,782	6,000,000
5. ICG Transmission Limited	GL-30(AO-2)(2)	Rainy River, Ont.	1/11/70	31/10/95	46,662	12,144	299,990
6. TransCanada PipeLines Limited	GL-42(1)	(Sault Ste. Marie, and Sarnia, Ont.)	15/ 4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	2,129,232
7. Consolidated Natural Gas Limited	GLI-5(AO-1)	N/S	15/ 3/72	31/10/92	150,000	45,000	669,000

(1) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(2) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
N/S Not specified.

APPENDIX VII — Continued

Subsisting Licences and Orders to Import Natural Gas, Propane, and Ethane (as at December 1974)

Importer		Licence or Order Number	Point of Import
B. Propane			
1. Dome Petroleum Limited		GL-31(AO-4) ⁽¹⁾	Sarnia, Ont.
Term of Licence or Order		Maximum Annual Volumes	
From	to	Column A (Barrels)	Column B (Barrels)
5/6/73 ⁽²⁾	31/12/73	6,287,500	5,827,500
1/1/74	31/12/74	5,991,500	5,481,500
1/1/75	31/12/75	5,913,000	5,338,000
1/1/76	31/12/76	5,751,500	5,121,500
1/1/77	31/12/77	5,582,500	4,887,500
1/1/78	31/12/78	5,457,000	4,692,000
1/1/79	31/12/79	5,357,000	4,517,000
1/1/80	31/12/80	5,263,000	4,338,000
1/1/81	31/12/81	5,114,000	4,134,000
1/1/82	31/12/82	4,949,000	3,909,000
1/1/83	31/12/83	4,665,500	839,500
1/1/84	31/12/84	4,316,500	839,500
1/1/85	31/12/85	3,898,000	839,500
1/1/86	31/12/86	3,362,000	839,500
1/1/87	31/12/87	2,930,500	906,000
1/1/88	31/12/88	2,489,000	1,216,000
1/1/89	31/12/89	2,078,000	1,241,000
1/1/90	31/12/90	1,690,000	1,065,000
1/1/91	31/12/91	1,396,000	1,045,000
1/1/92	31/12/92	1,339,500	1,040,000
1/1/93	31/12/93	1,233,500	1,025,000
1/1/94	31/12/94	1,011,000	655,000
1/1/95	31/12/95	294,000	0
2. Amoco Canada Petroleum Company Ltd.		GL-32(AO-2) ⁽³⁾	Sarnia, Ont.
5/6/73 ⁽⁴⁾	31/12/73	3,872,500	3,589,500
1/1/74	31/12/74	3,579,000	3,274,000
1/1/75	31/12/75	3,533,000	3,189,000
1/1/76	31/12/76	3,421,500	3,046,500
1/1/77	31/12/77	3,287,000	2,878,000
1/1/78	31/12/78	3,197,500	584,000
1/1/79	31/12/79	3,133,500	584,000
1/1/80	31/12/80	3,077,000	584,000
1/1/81	31/12/81	2,987,500	584,000
1/1/82	31/12/82	2,943,500	584,000
1/1/83	31/12/83	2,832,500	584,000
1/1/84	31/12/84	2,610,000	584,000
1/1/85	31/12/85	2,401,500	584,000
1/1/86	31/12/86	2,182,500	584,000
1/1/87	31/12/87	2,024,000	584,000
1/1/88	31/12/88	1,838,000	584,000
1/1/89	31/12/89	1,690,000	584,000
1/1/90	31/12/90	1,546,000	584,000
1/1/91	31/12/91	1,396,000	584,000
1/1/92	31/12/92	1,339,500	584,000
1/1/93	31/12/93	1,233,500	584,000
1/1/94	31/12/94	1,011,000	486,400
1/1/95	31/12/95	294,000	0

PENDIX VII— Continued

Existing Licences and Orders to Import Natural Gas, Propane, and Ethane
as of December 1974)

Importer		Licence or Order Number	Point of Import
<i>Propane</i>			
Pan Canadian Gas Products Ltd.		GL-34(AO-3) ⁽⁵⁾	Sarnia, Ont.
Term of Licence or Order		Maximum Annual Volumes	
From	To	Column A (Barrels)	Column B (Barrels)
5/6/73 ⁽⁶⁾	31/12/73	2,415,000	2,238,000
1/1/74	31/12/74	2,412,500	2,207,500
1/1/75	31/12/75	2,380,000	2,149,000
1/1/76	31/12/76	2,330,000	2,075,000
1/1/77	31/12/77	2,295,500	2,009,500
1/1/78	31/12/78	2,259,500	401,500
1/1/79	31/12/79	2,223,500	401,500
1/1/80	31/12/80	2,186,000	401,500
1/1/81	31/12/81	2,126,500	401,500
1/1/82	31/12/82	2,005,000	401,500
1/1/83	31/12/83	1,833,000	401,500
1/1/84	31/12/84	1,706,500	401,500
1/1/85	31/12/85	1,496,500	401,500
1/1/86	31/12/86	1,179,500	335,000
1/1/87	31/12/87	906,500	25,000
1/1/88	31/12/88	651,000	0
1/1/89	31/12/89	388,000	0
1/1/90	31/12/90	144,000	0

Dome Petroleum Limited

GL-46(AO-2)⁽⁷⁾ Sarnia, Ont.

Term of Licence or Order		Maximum Volume
From	To	(Barrels)
1/4/74	31/3/75	1,930,000
1/4/75	31/3/76	2,560,000
1/4/76	31/3/77	2,990,000
1/4/77	31/3/78	3,930,000
1/4/78	31/3/79	3,900,000
1/4/79	31/3/80	3,790,000
1/4/80	31/3/81	3,450,000
1/4/81	31/3/82	2,950,000
1/4/82	31/3/83	2,400,000
1/4/83	31/3/84	2,100,000

Ethane

Dome Petroleum Limited

GL-45(AO-2)⁽¹⁾ Sarnia, Ont.

From	To	Maximum Volume (Barrels)
1/4/74	31/3/75	1,830,000
1/4/75	31/3/76	1,830,000
1/4/76	31/3/77	1,830,000
1/4/77	31/3/78	1,940,000
1/4/78	31/3/79	1,970,000
1/4/79	31/3/80	2,010,000
1/4/80	31/3/81	2,080,000
1/4/81	31/3/82	2,190,000
1/4/82	31/3/83	2,230,000
1/4/83	31/3/84	2,090,000

APPENDIX VII — Concluded

Subsisting Licences and Orders to Import Natural Gas, Propane, and Ethane (as at December 1974)

Footnotes

- (1) This licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-26 with Licence No. GL-31 whereby certain quantities of the propane exported near Gretna, Manitoba and Elmore, Sask. is imported into and exported from Canada near Sarnia and Windsor, Ontario. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import that volume of such propane exported during that period as provided by the Licence. The Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.
- (2) This period includes the volumes of propane exported and imported pursuant to Licences GL-26 and GL-31 during the part of 1973 prior to the date of issue of this order.
- (3) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-27 with Licence No. GL-32. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.
- (4) This period includes the volumes of propane exported and imported pursuant to Licences GL-27 and GL-32 during the part of 1973 prior to the day of the issue of this order.
- (5) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.
- (6) This period includes the volumes of propane exported and imported pursuant to Licences GL-33 and GL-34 during the part of 1973 prior to the day of the issue of this order.
- (7) This is an import-export licence whereby no propane may be exported at Windsor, Ontario, that has not been imported at Sarnia, Ontario. Notwithstanding the above export and import points, the Licensee may export propane at Sarnia, Ontario, and import propane at Windsor, Ontario, during a specified period terminating when leave to open the pipeline authorized under Certificate is granted by the Board.
- (8) This licence authorizes an import near Sarnia, Ontario. The quantity of ethane imported under the authority of this licence shall be equal to the quantities of ethane which the Licensee exports near Windsor, Ontario. Notwithstanding the export and import points specified in Licence GL-45, the Licensee may export ethane at Sarnia, Ontario, and import ethane at Windsor, Ontario, during a specified period terminating the day that leave to open the pipeline authorized under Certificate is granted by the Board.

Imports of Natural Gas

Importer and Licence/Order	Maximum		(MMcf)							Total Authorized Imports	Remaining (1) under Licences
	Daily (Mcf)	Annual (Mmcf)	Cumulative to 31/12/69	1970	1971	1972	1973	1974	Cumulative to 31/12/74		
1. Courtts Gas Company Limited PC1955-1742	N/S	120	797	—	—	—	—	—	797	2,340	N/A
2. Border Utilities Ltd. GO-2-66 (A0-1)	1,000	N/S	127	35	36	39	33	30	300	N/S	N/A
3. Canadian Western Natural Gas Company Limited GO-6-66 (A0-1)	1,000	N/S	283	74	77	87	55	1	577	N/S	N/A
4. Union Gas Company of Canada, Limited PC1956-1848	N/S	5,500	72,563	—	—	—	—	—	72,563	N/S	N/A
5. Union Gas Company of Canada, Limited GLI-1	55,000	15,500	57,450	10,625	14,236	15,426	14,736	13,231	125,704	167,042(2)	41,338
6. TransCanada Pipelines Limited GLI-2 (A0-2)	N/S	25,500	77,040	126	—	—	—	—	77,166	86,500	N/A
01/11/65 — 01/11/66	N/S	30,400									
01/11/66 — 01/11/67	N/S	15,300									
01/11/67 — 01/11/68	N/S	10,200									
01/11/68 — 01/11/69	N/S	5,100									
01/11/69 — 01/11/70	20,000	3,000	5,896	—	—	—	—	—	5,896	5,896(2)	—
7. Tacumseh Gas Storage Limited GLI-3	N/S	N/S	79,029	—	—	—	—	—	79,029	82,303	N/A
8. TransCanada PipeLines Limited GLI-4 (A0-6)	150,000	45,000	—	—	—	2,669	28,604	19,664	50,937	669,000	618,063
9. Consolidated Natural Gas Limited GLI-5 (A0-1)(5)	N/S	247,782	177,137	231,557	223,189	220,480	228,608	214,391	1,295,362	6,000,000	4,704,638
10. TransCanada PipeLines Limited GL-21 (A0-5)(3)	46,662	12,144	—	45	9,100	11,500	10,286	11,084	42,015	299,990	257,975
11. ICG Transmission Limited GL-30 (A0-2)(4)	N/S	8,218	{ 92,218	—	17,911	82,057	85,082	79,791	264,841	2,129,232	1,864,391
12. TransCanada PipeLines Limited GL-42(3)	N/S	N/S									
15/04/71 — 31/10/71 01/11/71 — 31/10/94	N/S	N/S									
13. TransCanada Pipelines Limited EO-2-62	70,000	N/S	2	—	—	—	—	—	2	5	N/A
14. TransCanada PipeLines Limited EO-1-63	N/S	N/S	199	—	—	—	—	—	199	1,000	N/A
15. Union Gas Company of Canada, Limited EO-2-63	N/S	N/S	55	—	—	—	—	—	55	55	—
16. Union Gas Company of Canada, Limited EO-3-63	N/S	N/S	1,083	—	—	—	—	—	1,083	1,965(2)	N/A
17. TransCanada PipeLines Limited EO-1-64	140,000	N/S	2,511	—	—	—	—	—	2,511	2,500	N/A
18. TransCanada PipeLines Limited EO-2-64 (A0-1)	150,000	N/S	1,756	—	—	—	—	—	1,756	3,450	N/A
19. Union Gas Company of Canada, Limited EO-2-66 (A0-1)	N/S	N/S	7,861	—	—	—	—	—	7,861	7,861(2)	—
20. Union Gas Company of Canada, Limited EO-1-67	N/S	N/S	7,861	—	—	—	—	—	7,861	7,861(2)	—
21. TransCanada PipeLines Limited EO-2-67	N/S	N/S	389	—	—	—	—	—	389	500	N/A
22. Westcoast Transmission Company Limited EO-4-70	N/A	N/A	—	1	—	—	—	—	1	N/A	—
23. TransCanada PipeLines Limited EO-1-72	100,000	N/A	—	—	—	121	—	—	121	N/S	N/A

Imports of Natural Gas

(1) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.
(2) Converted from "wet base" to "dry base" for purpose of comparability.

(3) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(4) This licence authorizes an export near Sarnia, Manitoba for re-import near Sault Ste. Marie and Emerson, Ontario, to serve the Eastern Canadian market.

(5) The quantities of gas authorized for import by this licence near Loomis, Saskatchewan, are authorized to be exported at Emerson, Manitoba, pursuant to Licence GL-44.

Product	Quantity	Unit Price	Total Price
1.000	1.000	1.000	1.000
2.000	2.000	2.000	2.000
3.000	3.000	3.000	3.000
4.000	4.000	4.000	4.000
5.000	5.000	5.000	5.000
6.000	6.000	6.000	6.000
7.000	7.000	7.000	7.000
8.000	8.000	8.000	8.000
9.000	9.000	9.000	9.000
10.000	10.000	10.000	10.000
11.000	11.000	11.000	11.000
12.000	12.000	12.000	12.000
13.000	13.000	13.000	13.000
14.000	14.000	14.000	14.000
15.000	15.000	15.000	15.000
16.000	16.000	16.000	16.000
17.000	17.000	17.000	17.000
18.000	18.000	18.000	18.000
19.000	19.000	19.000	19.000
20.000	20.000	20.000	20.000
21.000	21.000	21.000	21.000
22.000	22.000	22.000	22.000
23.000	23.000	23.000	23.000
24.000	24.000	24.000	24.000
25.000	25.000	25.000	25.000
26.000	26.000	26.000	26.000
27.000	27.000	27.000	27.000
28.000	28.000	28.000	28.000
29.000	29.000	29.000	29.000
30.000	30.000	30.000	30.000
31.000	31.000	31.000	31.000
32.000	32.000	32.000	32.000
33.000	33.000	33.000	33.000
34.000	34.000	34.000	34.000
35.000	35.000	35.000	35.000
36.000	36.000	36.000	36.000
37.000	37.000	37.000	37.000
38.000	38.000	38.000	38.000
39.000	39.000	39.000	39.000
40.000	40.000	40.000	40.000
41.000	41.000	41.000	41.000
42.000	42.000	42.000	42.000
43.000	43.000	43.000	43.000
44.000	44.000	44.000	44.000
45.000	45.000	45.000	45.000
46.000	46.000	46.000	46.000
47.000	47.000	47.000	47.000
48.000	48.000	48.000	48.000
49.000	49.000	49.000	49.000
50.000	50.000	50.000	50.000
51.000	51.000	51.000	51.000
52.000	52.000	52.000	52.000
53.000	53.000	53.000	53.000
54.000	54.000	54.000	54.000
55.000	55.000	55.000	55.000
56.000	56.000	56.000	56.000
57.000	57.000	57.000	57.000
58.000	58.000	58.000	58.000
59.000	59.000	59.000	59.000
60.000	60.000	60.000	60.000
61.000	61.000	61.000	61.000
62.000	62.000	62.000	62.000
63.000	63.000	63.000	63.000
64.000	64.000	64.000	64.000
65.000	65.000	65.000	65.000
66.000	66.000	66.000	66.000
67.000	67.000	67.000	67.000
68.000	68.000	68.000	68.000
69.000	69.000	69.000	69.000
70.000	70.000	70.000	70.000
71.000	71.000	71.000	71.000
72.000	72.000	72.000	72.000
73.000	73.000	73.000	73.000
74.000	74.000	74.000	74.000
75.00			

PENDIX IX

Exports of Crude Oil and Equivalent to U.S.A.

(Units of 34.9722 Standard Gallons)

		1973		1974	
		Total for Year	Daily Average	Total for Year	Daily Average
<i>Exports I-IV</i>					
Amoco Oil Company	Whiting, Indiana	16,119,288	44,162	14,412,400	39,486
Amoco Oil Company	Mandan, N. Dakota	2,706,762	7,416	2,355,843	6,454
Amoco Oil Company	Sugar Creek, Missouri	390,092	1,069	61,000	167
Amoco Oil Company	Casper, Wyoming	1,410,242	3,864	1,142,089	3,129
Amoco Oil Company	Wood River, Illinois	588,449	1,612	—	—
American Petrofina Inc.	Kansas City, Kansas	1,319,424	3,615	381,198	1,044
Amoco Oil Corporation	Kansas City, Kansas	1,339,755	3,671	992,713	2,719
Standard Oil & Refining Co.	N. Tonawanda, New York	22,398,297	61,365	17,085,631	46,810
Standard Oil & Refining Co.	Canton, Ohio	3,918,867	10,737	1,203,068	3,296
Standard Oil & Refining Co.	Findlay, Ohio	889,033	2,436	351,915	964
Standard Oil & Refining Co.	St. Paul, Minnesota	19,327,326	52,951	18,536,447	50,785
Continental Richfield Oil Co.	East Chicago, Indiana	7,551,374	20,688	7,175,570	19,659
Continental Refining Company	Bay City, Michigan	4,969,954	13,616	4,468,624	12,243
Canadian Hydrocarbons Ltd.	Cut Bank & Kevin, Montana	1,212,137	3,321	1,164,280	3,189
Continental Oil & Refining Corp.	Blue Island, Illinois	19,024,141	52,121	12,264,188	33,601
Continental Fuel Service Co.	Rapid River, Michigan	—	—	15,540	42
Continental Oil Company	Billings, Montana	14,949,147	40,956	9,880,448	27,070
Continental Oil Company	Denver, Colorado	1,841,778	5,046	2,267,759	6,213
Continental Oil Company	Ponca City, Oklahoma	292,800	802	225,029	617
Continental Oil Company	Wrenshall, Minnesota	7,295,899	19,989	7,735,947	21,194
Continental Refining Company	Marysville & Jackson, Michigan	3,380,298	9,261	10,684,831	29,274
Continental Refining Company	Coffeetown, Kansas	861,646	2,361	522,924	1,433
Continental Refining Company	Phillipsburg, Kansas	635,450	1,741	522,316	1,431
Continental Refining Company	Scottsbluff, Nebraska	146,283	401	117,086	321
Continental Refining Company	Carson City & Kalamazoo, Michigan	764,830	2,095	626,611	1,717
Continental Refining Company	Carson City Inc.	—	—	—	—
Continental Refining Company	Wichita, Kansas	832,509	2,281	526,812	1,443
Continental Refining Company	River Rouge, Michigan	1,591,500	4,360	1,750,394	4,796
Continental Refining Company	Laurel, Montana	4,650,506	12,741	5,549,407	15,204
Continental Refining Company	Cheyenne, Wyoming	1,462	4	—	—
Continental Refining Inc.	Fort Wayne, Indiana	780,205	2,138	603,003	1,652
Continental Refining Inc.	Toledo, Ohio	10,470,748	28,687	8,274,321	22,669
Continental Refining Inc.	Billings, Montana	4,599,094	12,600	4,748,941	13,011
Continental Refining Inc.	Cheyenne, Wyoming	1,030,117	2,822	1,140,572	3,125
Continental Refining Inc.	Pine Bend, Minnesota	31,245,466	85,604	24,850,278	68,083
Continental Refining Inc.	Ashland, Wisconsin	310,526	851	—	—
Continental Refining Inc.	Superior, Wisconsin	257,615	706	200,625	550
Continental Refining Inc.	Laketon, Indiana	882,936	2,419	489,623	1,341
Continental Refining Inc.	Casper, Wyoming	448,829	1,230	957,165	2,622
Continental Refining Inc.	Detroit, Michigan	6,078,340	16,653	5,022,897	13,761
Continental Refining Inc.	Buffalo, New York	14,734,686	40,369	10,660,175	29,206
Continental Refining Inc.	Woodhaven, Michigan	166,385	456	—	—
Continental Refining Inc.	East Chicago, Indiana	4,371,415	11,976	266,485	730
Continental Refining Inc.	Joliet, Illinois	12,878,080	35,282	9,280,720	25,427
Continental Refining Inc.	Superior, Wisconsin	13,284,979	36,397	10,513,037	28,803
Continental Refining Inc.	McPherson, Kansas	1,279,969	3,507	1,192,567	3,267
Continental Refining Inc.	Sinclair, Wyoming	—	—	563,527	1,544
Continental Refining Inc.	Kansas City, Kansas & Billings, Montana	1,601,587	4,388	2,224,589	6,095
Continental Refining Inc.	Denver, Colorado	356,371	976	353,872	970
Continental Refining Inc.	Rock Island, Indiana	1,142,767	3,131	713,598	1,955
Continental Refining Inc.	Wood River, Illinois	5,806,456	15,908	8,767,289	24,020
Continental Refining Inc.	El Dorado, Kansas	1,731,465	4,744	1,966,872	5,389
Continental Refining Inc.	Toledo, Ohio	21,521,091	58,962	12,233,320	33,516
Continental Refining Inc.	Lima, Ohio	1,171,818	3,210	293,577	804
Continental Refining Inc.	Toledo, Ohio	11,336,256	31,058	7,565,184	20,727
Continental Refining Inc.	Chalmette, Louisiana	—	—	1,065,000	2,918

APPENDIX IX — Concluded

Exports of Crude Oil and Equivalent to U.S.A.

(Barrels of 34.9722 Standard Gallons)

		1973		1974	
		Total for Year	Daily Average	Total for Year	D Av
Tesoro Petroleum	Newcastle, Wyoming & Wolf Point, Montana	320,802	879	212,631	
Texaco Incorporated	Lockport, Illinois	9,741,370	26,688	5,904,489	1
Texaco Incorporated	Lawrenceville, Illinois	1,911,326	5,237	310,000	
Texaco Incorporated	Casper, Wyoming	—	—	108,500	
Total Leonard Refineries, Inc.	Alma, Michigan	7,354,224	20,149	5,287,952	1
Union Oil Company of California	Lemont, Illinois	6,540,796	17,920	5,192,989	1
United Refining Company	Warren, Pennsylvania	8,992,590	24,637	7,278,859	1
United Refining Company	West Branch, Michigan	2,010,989	5,510	1,347,980	
Total Districts I-IV		324,768,547	889,777	261,610,584	71
<i>District V</i>					
Atlantic Richfield Oil Company	Cherry Point, Washington	22,135,213	60,644	14,906,558	4
Mobil Oil Company	Ferndale, Washington	21,118,371	57,859	18,472,212	5
Mohawk Oil Company Ltd.	Tacoma, Washington	—	—	124,381	
Shell Oil Company	Anacortes, Washington	27,214,293	74,560	21,516,582	5
Texaco Incorporated	Anacortes, Washington	20,222,022	55,403	15,853,693	4
Total District V		90,689,899	248,466	70,873,426	19
Total U.S.A.		415,458,446	1,138,243	332,484,010	91

Source: Company reports to the Board.

APPENDIX X

Pipeline Leaks, Breaks and Malfunctions

The following is a summary of leaks, breaks, malfunctions and other pipeline incidents during the operation of pipelines reported to the Board during 1974 by companies under the jurisdiction of the National Energy Board:

Origin of Reported Incidents	Number of Incidents
Internal and external corrosion of pipe and equipment	9
Defective Mill Welds	2
Defective Field Welds	5
Pipe Material Defects	3
Defective Equipment and Piping	7
Damage during Construction by others	4
Operational Failures	5
Miscellaneous	5
Total	40

ENDIX XI

Licences and Orders to Export Electric Power and Energy — 1974

New Licences Issued in 1974 Pursuant to Section 82

Applicant	Class	Kilowatts	Annual Kilowatthours (Millions)	Term	Application Heard	Issued	Licence No.
The Hydro Electric Power Commission of Ontario	Inter- ruptible	—	8,250	24/12/73 to 31/12/75	23/10/73	2/1/74	EL-76
St. Lawrence Power Company	Inter- ruptible	—	150	1/10/74 to 30/6/79	20/8/74	4/10/74	EL-77
Quebec Hydro-Electric Commission	Inter- ruptible	—	1,530	1/1/75 to 31/5/77	27/11/74	19/12/74	EL-78

New Orders Issued in 1974 Pursuant to Section 6A of the Regulations Under Part VI of the Act*

Applicant	Class	Kilowatts	Annual Kilowatthours (Thousands)	Term From Date of Issue-Months	Issued	Order No.
Manitoba Hydro	Firm	12	15	36	25/4/74	ELO-112

Under Section 6A the Board may by order authorize the exportation of not more than 4,000 kilowatts of electric power and not more than 100,000 kilowatthours per year of electrical energy for a term not exceeding three years upon such terms and conditions as the Board may prescribe.

Emergency Orders Issued in 1974 Pursuant to Section 19 of the Regulations Under Part VI of the Act*

Applicant	Class	Total Kilowatthours (Millions)	Term	Issued	Order No.
Quebec Hydro-Electric Commission	Inter- ruptible	765	1/7/74 to 31/12/74	28/6/74	EOE-1-74

Under Section 19 the Board may by order authorize the export of power where, in the opinion of the Board, emergency conditions have arisen that may cause an interruption in the supply of power to consumers served by interconnected system in the U.S.A. or Canada.

Revoking Orders Issued in 1974 Pursuant to Section 84

Applicant	Description	Issued	Order No.
The Hydro-Electric Power Commission of Ontario	Order to suspend Licence EL-33 dated 16 March 1965	31/1/74	AO-2-EL-33

APPENDIX XI – Concluded

New Licences and Orders to Export Electric Power and Energy – 1974

E. Amending Orders Issued in 1974 Relative to Electric Power Export Licences

Applicant	Associated Licence	Issued	Order
1. Cominco Ltd.	EL-74	4/4/74	AO-1-
2. Manitoba Hydro-Electric Board	EL-57	18/4/74	AO-2-
3. British Columbia Hydro and Power Authority	EL-46	18/4/74	AO-1-
4. British Columbia Hydro and Power Authority	EL-47	18/4/74	AO-2-
5. British Columbia Hydro and Power Authority	EL-49	18/4/74	AO-3-
6. British Columbia Hydro and Power Authority	EL-50	18/4/74	AO-3-
7. Manitoba Hydro-Electric Board	EL-57	18/7/74	AO-3-
8. The New Brunswick Electric Power Commission	EL-52	10/10/74	AO-1-
9. The New Brunswick Electric Power Commission	EL-53	10/10/74	AO-1-
10. British Columbia Hydro and Power Authority	EL-46	7/11/74	AO-2-
11. British Columbia Hydro and Power Authority	EL-47	7/11/74	AO-3-
12. British Columbia Hydro and Power Authority	EL-49	7/11/74	AO-4-
13. British Columbia Hydro and Power Authority	EL-50	7/11/74	AO-4-
14. Southern Canada Power Company Limited	EL-30	28/11/74	AO-6-
15. Southern Canada Power Company Limited	EL-31	28/11/74	AO-6-

APPENDIX XII

Exports of Electric Energy — Calendar Year 1974

Exporter	Licence Number	Thousands of Kilowatthours				Reported Dollar Value of Export	
		Licence Authorization		Gross Energy Exported		Firm	Interruptible
		Firm	Interruptible	Firm	Interruptible	\$	\$
Maine and New Brunswick Electrical Power Company, Limited	EL-22	250,000		116,629		984,704	
	EL-23		25,000		669		1,290
Fraser Companies, Limited	EL-60	300,000		283,140		2,689,070	
	EL-61		30,000		—		—
The New Brunswick Electric Power Commission	EL-67	473,040		254,806		3,853,568	
	EL-68		150,000		26,609		470,697
	EL-69	102,492		40,115		756,998	
	EL-70		163,812		5,894		79,594
	EL-71	100,000		59,593		(a)	
	EL-72	131,400					
	EL-51	1,000,000		770,487		5,411,725	
	AO-1-EL-52	760,500		—		—	
	AO-1-EL-53		2,500,000		938,418		15,204,005
	ELO-105 to ELO-107	225		204		6,965	
Sub-Total New Brunswick				1,524,974	971,590	13,703,030	15,755,586
Cedars Rapids Transmission Company Limited	ELO-110		20,000		—		—
Quebec Hydro-Electric Commission	EOE-3-73		750,000		483,812		4,631,349
	EOE-1-74		765,000		314,437		5,623,084
	ELO-97 to 103 & 109	566		357		4,067	
Southern Canada Power Company Limited	AO-6-EL-30		74,250		70,142		631,892
	AO-6-EL-31	13,000		12,300		174,611	
Sub-Total Quebec				12,657	868,391	178,678	10,886,325
The Hydro-Electric Power Commission of Ontario	EL-32	15,000		1,089		2,177	
	EL-76		8,250,000		7,356,000		101,134,468
	ELO-96	10		9		178	
Canadian Niagara Power Company Limited	EL-58	307,000		213,197		1,530,236	
	EL-59		160,000		90,350		424,646
The Ontario-Minnesota Pulp and Paper Company, Limited	EL-62	254,000		178,253		1,806,009	
	EL-63		87,600		—		—
The Detroit and Windsor Subway Company	ELO-111	1,000		797		—	
The Canadian Transit Company	ELO-104	25		24		—	
St. Lawrence Power Company	EL-77		150,000		32,674		326,550
Sub-Total Ontario				393,369	7,479,024	3,338,600	101,885,664
Manitoba Hydro	EL-56	339,000		206,387		1,718,235	
	AO-3-EL-57		1,400,000		1,145,992		9,571,474
	ELO-112	15		9		192	
Sub-Total Manitoba				206,396	1,145,992	1,718,427	9,571,474

Exports of Electric Energy — Calendar Year 1974

(1) No dollar value. Carrier transfer energy wheeled through U.S.A., back to Canada.

Canadian Electric Energy Supply and Trade with the U.S. — Calendar Year 1974

Electric Energy Generation for all Canada – 278,969 (preliminary)
 Electric Energy Importation from U.S.A. – 2,441 (preliminary)
 Total Canadian Electric Energy Supply – 281,410 (preliminary)
 Electric Energy Export (Gross) to U.S.A. – 2,988 (firm) – 1.1% Canadian Supply
 – 12,411 (interruptible) – 4.4% of Canadian Supply

APPENDIX XIV

Exports of Propane, Ethane and Butane Under Long Term Licences and Orders (Volumes in Barrels)

Porter	Licence or Order Number	Period		Authorized Maximum Export Quantity in Period		1974 Actual Export	
		From	To	Gross	Net	Gross	Net
Propane							
Imperial Oil Limited	GL-31(AO-4) ⁽¹⁾	1/01/74	31/12/74	5,991,500	5,481,500	4,135,682	5,142,627
Amoco Canada Petroleum Company Ltd.	GL-32(AO-2) ⁽¹⁾	1/01/74	31/12/74	3,579,000	3,274,000	3,170,840	1,619,967
Canadian Gas Products Ltd.	GL-34(AO-3) ⁽¹⁾	1/01/74	31/12/74	2,412,500	2,207,500	1,951,541	1,873,945
Imperial Oil Limited	GL-46(AO-2) ⁽¹⁾	1/04/74	31/03/75	N/A	1,930,000	N/A	434,754
Amoco Canada Petroleum Company Ltd.	GO-1-73 ⁽²⁾	19/04/73	19/04/74	N/A	365,000	N/A	361,375
Imperial Oil Limited	EPR-257-74 ⁽³⁾	3/10/74	31/12/74	N/A	607,200	N/A	76,483
Ethane							
Imperial Oil Limited	GL-45(AO-2) ⁽¹⁾	1/04/74	31/03/75	N/A	1,830,000	N/A	351,032
Butane							
Imperial Oil Limited	EBU-1-74(AO-1) ⁽⁴⁾	1/04/74	31/03/75	N/A	2,450,000	N/A	441,758
Imperial Oil Limited	EBU-132-74 ⁽⁵⁾	1/07/74	31/12/74	N/A	1,949,100	N/A	942,783
Amoco Canada Petroleum Company Ltd.	EBU-133-74 ⁽⁵⁾	1/04/74	31/12/74	N/A	1,487,400	N/A	1,176,183
Canadian Gas Products Ltd.	EBU-134-74 ⁽⁵⁾	1/07/74	31/12/74	N/A	1,055,160	N/A	414,274
Imperial Oil Limited	EBU-202-74 ⁽⁵⁾	3/10/74	31/12/74	N/A	364,300	N/A	51,830

See Appendix IV for licence particulars.

This is an export-import order which allowed the exportation of propane near Gretna, Manitoba and which allowed the re-importation near Sarnia, Ontario of all or part of the propane exported near Gretna, Manitoba, and which allowed the exportation of propane near Sarnia, Ontario and near Windsor, Ontario.

This is an export-import order which allows the exportation of propane near Gretna, Manitoba and which allows the importation of said propane near Sarnia, Ontario.

This is an import-export order which allows the importation of butanes near Sarnia, Ontario and which allows the exportation of said butanes near Windsor, Ontario and at Sarnia, Ontario.

This is an export-import order which allows the exportation of butanes near Gretna, Manitoba and which allows the importation of said butanes near Sarnia, Ontario.

APPENDIX XV

Imports of Propane, Ethane and Butane Under Long Term Licences and Orders (Volume in Barrels)

Importer	Licence or Order Number	Period		Authorized Maximum Import Quantity in Period	1974 Actual Imports
		From	To		
A. Propane					
1. Dome Petroleum Limited	GL-31(AO-4) ⁽¹⁾	1/01/74	31/12/74	5,991,500	2,937,8
2. Amoco Canada Petroleum Company Ltd.	GL-32(AO-2) ⁽¹⁾	1/01/74	31/12/74	3,579,000	1,859,9
3. PanCanadian Gas Products Ltd.	GL-34(AO-2) ⁽¹⁾	1/01/74	31/12/74	2,412,500	1,438,8
4. Dome Petroleum Limited	GL-46(AO-2) ⁽¹⁾	1/04/74	31/03/75	1,930,000	505,7
5. Amoco Canada Petroleum Company Ltd.	GO-1-73 ⁽²⁾	19/04/73	19/04/74	365,000	—
6. Imperial Oil Limited	EPR-257-74 ⁽³⁾	3/10/74	31/12/74	607,200	46,9
B. Ethane					
1. Dome Petroleum Limited	GL-45(AO-2) ⁽¹⁾	1/04/74	31/03/75	1,830,000	414,5
C. Butane					
1. Dome Petroleum Limited	EBU-1-74(AO-1) ⁽⁴⁾	1/04/74	31/03/75	2,450,000	511,2
2. Dome Petroleum Limited	EBU-132-74 ⁽⁵⁾	1/07/74	31/12/74	1,949,100	942,7
3. Amoco Canada Petroleum Company Ltd.	EBU-133-74 ⁽⁵⁾	1/07/74	31/12/74	1,487,400	659,2
4. PanCanadian Gas Products Ltd.	EBU-134-74 ⁽⁵⁾	1/07/74	31/12/74	1,055,160	285,8
5. Imperial Oil Limited	EBU-202-74 ⁽⁵⁾	3/10/74	31/12/74	364,300	29,0

(1) See Appendix VII for licence particulars.

(2) This is an export-import order which allowed the exportation of propane near Gretna, Manitoba and which allowed the re-importation of propane near Sarnia, Ontario of all or part of the propane exported near Gretna, Manitoba, and which allowed the exportation of propane near Sarnia, Ontario and near Windsor, Ontario.

(3) This is an export-import order which allows the exportation of propane near Gretna, Manitoba and which allows the importation of propane near Sarnia, Ontario.

(4) This is an import-export order which allows the importation of butanes near Sarnia, Ontario and which allows the exportation of butanes near Windsor, Ontario and at Sarnia, Ontario.

(5) This is an export-import order which allows the exportation of butanes near Gretna, Manitoba and which allows the importation of butanes near Sarnia, Ontario.

PENDIX XVI

Exports of Propane and Butanes 1974

(Volume in barrels)

Names of Exporters	Propane	Butanes
Amerada Minerals Corp. of Canada	129,875	72,621
Amoco Canada Petroleum Co. Ltd	2,264,249	1,636,739
Belgo Canadian Mfg. Co. Ltd	-0-	21
Canadian Enterprise Gas Products Ltd	-0-	775
Canadian Propane Gas & Oil Ltd	351,062	-0-
Canadian Superior Oil Ltd	624,042	671,890
Canmore Mines Ltd	131,314	-0-
Chevron Standard Ltd	1,226,414	90,896
Cigas Products Ltd	77,155	66,973
Consolidated Natural Gas Ltd	44,808	-0-
C.M. Dining Co.	2,585	-0-
Dome Petroleum Ltd	6,155,840	2,038,607
Dow Chemical of Canada Ltd	538,895	-0-
Elgin Petroleum Ltd	37,876	-0-
Federated Co-operatives Refineries Ltd	-0-	14,434
Gasbec Inc.	489,723	-0-
Gavan Petroleums Ltd	52,033	-0-
Goliad Oil & Gas Co. & Goliad Ltd	357,462	140,133
Gulf Oil Canada Ltd	3,096,400	-0-
Hidrogas Ltd	596,414	425,908
Home Oil Co. Ltd	576,726	120,239
Hudson's Bay Oil & Gas Co. Ltd	429,640	1,628,568
Husky Oil Operations Ltd	-0-	313,308
Imperial Oil Ltd	980,221	64,775
Irving Oil Ltd	2,793	-0-
Koch Oil Co. Ltd	154,924	812,606
Latulippe Gaz Propane Inc.	23	-0-
M-P Petroleum Ltd	38,642	2,209
Mobil Oil Canada Ltd	78,657	1,037,197
Murphy Oil Co. Ltd	-0-	30,545
N.G.L. Supply Ltd	463,667	199,197
Northern Petro Products Ltd	141,377	77,447
Northwest L.P.G. Supply Ltd	89,043	104,612
Pacific Petroleums Ltd	1,743,760	1,462,491
PanCanadian Gas Products Ltd	1,874,835	269,892
Polysar Ltd	3,716	-0-
Real Marketing Ltd	8,201	12,910
Shaban Manufacturing Ltd	158	-0-
Shell Canada Ltd	192,061	2,176,145
Solar Gas Ltd	11,756	-0-
Stillings Petroleum (Canada) Ltd	-0-	52,089
Sun Oil Co. Ltd	25,705	-0-
Superior Propane Ltd	49	-0-
Tenneco Oil & Minerals Ltd	-0-	62,622
Texaco Exploration Canada Ltd	-0-	301,531
Union Oil Co. of Canada Ltd	275,356	-0-
Union Texas Petroleum Division	158,867	-0-
Weskem of Canada Ltd	25,538	-0-
Total	23,451,862	13,887,380

APPENDIX XVII

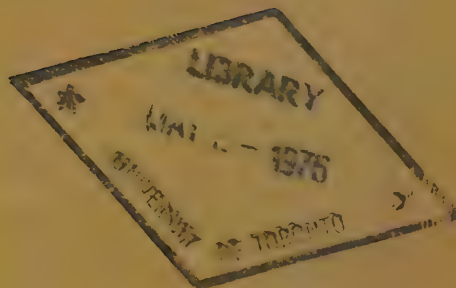
Licensed Exports of Crude Oil and Condensate to U.S. — 1974

Exporter	Barrels	
	Crude	Condensate
Amoco Canada Petroleum Company Ltd.	14,633,184	1,864,618
Ashland Oil Canada Limited	36,142,707	3,866,373
Canadian Propane Gas Oil Ltd.	377,050	—
Chevron Standard Ltd.	—	278,593
Clark Oil & Refining Corp.	11,319,457	2,645,465
Council of Forest Industries British Columbia	797,000	—
Dome Petroleum Ltd.	65,100	8,863,490
Gibson Petroleum Company Limited	6,445,997	253,678
Gulf Oil Canada Limited	12,413,759	918,516
Hudson's Bay Oil and Gas Company Limited	24,867,001	8,815,847
Husky Oil Operations Ltd.	3,270,265	—
Imperial Oil Limited	62,392,608	2,860,085
Interprovincial Pipe Line Ltd.	265,400	—
Koch Oil Co. Ltd.	31,966,765	1,341,112
Mobil Oil Canada Ltd.	36,861,272	2,617,896
Mohawk Oil Co. Ltd.	130,000	—
Murphy Oil Company Ltd.	11,456,302	495,218
Shell Canada Ltd	19,539,791	1,849,072
Sun Oil Company Ltd.	7,828,056	2,552,415
Tenneco Oil & Minerals	155,000	—
Texaco Exploration Canada Ltd.	22,480,122	286,601
Union Oil Company of Canada	4,338,430	707,304
Total Licences Issued in 1974	307,745,266	40,216,283

National Energy Board Annual Report 1975

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NATIONAL ENERGY BOARD ANNUAL REPORT 1975

1975
1975

Ce rapport annuel est publié séparément dans les deux langues officielles. Des copies en langue française pourront être obtenues du bureau de la division du secrétariat de l'Office national de l'énergie.

26 March, 1976

*The Honourable Alastair Gillespie, P.C.,
Minister of Energy, Mines and Resources,
Ottawa, Ontario*

Dear Sir:

In accordance with the provisions of Section 91 of the National Energy Board Act, the Revised Statutes of Canada, 1970, chapter N-6, I have the pleasure to submit the Annual Report of the National Energy Board for the year ended 31 December, 1975.

Yours faithfully,

A handwritten signature in dark ink, appearing to read 'Marshall A. Crowe', with a stylized, cursive script.

Marshall A. Crowe,
Chairman.

©

Information Canada
Ottawa, 1976

Cat. No.: NE 1-1975

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The Functions and Responsibilities of the National Energy Board

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal roles: to regulate specific areas of the oil, gas and electrical industries in the public interest, and to advise the Government on all matters concerned with the development and use of energy resources.

The Board on its own initiative may hold inquiries into a particular aspect of the energy situation and prepare a report for the information of the Government, of Parliament and of the general public.

The Board also carries out studies and prepares reports at the request of the Minister.

The Act requires the Board to regulate many aspects of the energy industries to ensure that the interests of the public are protected. The regulatory role of the Board encompasses the following fields:

Certificates of Public Convenience and Necessity

Only federally incorporated companies may be granted a certificate to construct or operate interprovincial and international pipelines. Before permission is granted for construction, through a certificate of public convenience and necessity, the Board considers the application at a public hearing. The Board may, however, issue orders for relatively minor additions or modifications to pipeline systems or transmission lines without calling a public hearing. These would include sections, branches and extensions of pipeline not more than 25 miles in length, and ancillary installations such as tanks, pumps, compressors, meter stations, and communications systems, as well as international power lines of maximum transfer capacity of 5,000 kilowatts.

Pipeline Utility Crossings

For reasons of safety, the protection of the environment, and other utilities' services, no pipeline may cross or be crossed by another utility without authorization of the Board. Authorization is made by Board order, without a public hearing, after consideration of all the relevant information.

Safety Regulations

Pipeline safety is an important aspect of the Board's responsibilities, and high standards are maintained through regulations and orders, and regular on-site inspections by Board staff.

Regulation of Pipeline Tolls, Tariffs, Accounting Practices

The regulation of rates, tolls and tariffs of pipeline companies under federal jurisdiction is carried out by the Board. In the establishment of fair and reasonable rates or charges for the transportation of oil and gas in a pipeline, the Board seeks to ensure that there is no unjust discrimination against any person or locality. The rates, tolls, or tariffs allowed also take into consideration the capital and operating costs of the pipeline company, and the necessity for it to earn an adequate return on its investment so as to be able to attract capital as needed to maintain and extend service.

To enable the Board to reach reasonable decisions it is essential that financial information provided by all companies be complete and in a form permitting full evaluation and comparison. This is accomplished by requiring oil and gas pipeline companies under the Board's jurisdiction to use uniform accounting classifications and practices to ensure compliance with the Board's requirements.

Licences and Orders

In considering applications for export licences, the Board is required by the National Energy Board Act to satisfy itself, among other things, that the quantities of energy involved do not exceed the surplus remaining after allowance has been made for reasonably foreseeable Canadian requirements. The Board must also be satisfied that the prices charged for exports are just and reasonable in relation to the public interest.

Responsibilities under the Petroleum Administration Act

The Petroleum Administration Act was passed on 19 June 1975, and the Board is required to administer certain aspects of the Act.

Part I of the Act imposes a charge on the export of crude oil and certain petroleum products. The Board is required to report to the Minister on a monthly basis its determination of the just and reasonable charge for exports in the following month. Upon the Minister's recommendation, the Governor in Council will set a tariff of charges in respect of that month, or will continue the prevailing tariff. The Board is required to administer and enforce Part I and to collect the charges imposed thereunder.

Under Part II of the Act, the government acquired the authority to prescribe by regulation the maximum prices for the purposes of interprovincial and international trade for the various qualities and kinds of crude oil produced, extracted or recovered in a province. These prices may be prescribed with or without provincial agreement. At present, the agreed domestic price of oil is \$8.00 a barrel as of 1 July 1975. The board carries out examinations of the various records, required to be kept by Section 33 of Part II.

The federal government also acquired under Part III the authority to prescribe, by regulation, the prices at which natural gas may be sold outside its province of production. These prices

may be prescribed with or without provincial agreement.

In determining the price to be prescribed, the Act requires the Governor in Council to give consideration to transportation and other costs, the source of gas available, the prices of alternative fuels in interprovincial markets and the probable effect on Canadian producers and consumers of the prescribed prices. Moreover, section 53 of the Act requires that the price paid within the producing provinces to acquire gas for interprovincial or international trade must meet the approval of the Board.

Domestic natural gas prices were prescribed on 1 November 1975, under the Petroleum Administration Act. This action followed the conclusion of the Federal-Alberta natural gas pricing agreement of mid-October. Under the agreement, the domestic wholesale prices for natural gas moving in interprovincial trade are determined by reference to the price of Canadian crude oil delivered at Toronto. Thus the reference natural gas price in TransCanada PipeLine's Eastern Zone, which includes Southern Ontario and Montreal, became \$1.25 per million Btu's (British thermal units) for CD-100 service* on November 1, 1975. This price represents about eighty-five per cent of the price of Canadian crude oil in the Toronto market. The Toronto reference price is converted to the equivalent "imputed Alberta border price" by deducting the cost of transportation determined by the NEB. The resulting "imputed Alberta border price" plus costs of transportation approved by the Board then becomes the basis for prescribing the price of all gas moving in interprovincial trade. Since the agreement with the Alberta government expires on 30 June 1976, a new Toronto reference price will have to be established to become effective on that date.

* *CD-100 service* means that the maximum daily contracted quantity (Contracted Demand or CD) is taken every day during the year (100 per cent annual load factor).

Implementation of Board Decisions

When the Board is prepared to grant a pipeline or power line certificate or to issue a licence for the export of gas or electricity, it so reports to the Governor in Council, i.e. to the Cabinet, through the Minister of Energy, Mines and Resources. The cabinet may accept or reject the Board's report. If the Board's report is concurred in by the Governor in Council, the certificate is issued by the Board or in an export case, the licence, already issued by the Board, comes into effect. When the Board refuses an application the decision is not subject to review by the Governor in Council. Following public hearings on these matters Board reports are issued as public documents.

Because of the special nature of the trade in crude oil and petroleum products—specifically the use of short term contracts and the need to make decisions on a daily basis—oil export controls are implemented directly by the Board without reference to the Governor in Council.

Applications for orders authorizing the export of propane and butane are also dealt with by the Board without reference to the Governor in Council.

Decisions regarding rates, tolls, and tariffs are implemented by the Board without reference to the Governor in Council, but "Reasons for Decision" are published.

Appeals of Board Decisions

The National Energy Board is a Court of Record. With regard to attendance, the swearing and examination of witnesses, the production and inspection of documents, and the enforcement of its orders, it has all the powers vested in a superior court of record.

A decision or order of the Board can be appealed to the Federal Court of Appeal, providing the appeal is based on a point of law or of jurisdiction. Leave to appeal must be obtained from the Court within one month of the Board's decision, although the Court may

allow a longer period under special circumstances. Judgements of the Federal Court of Appeal may, with leave, be appealed to the Supreme Court of Canada. The Federal Court of Appeal has jurisdiction to review and set aside a decision or order of the National Energy Board upon certain stipulated grounds.

The Trial Division of the Federal Court of Canada has exclusive jurisdiction to issue an injunction, writ of certiorari, writ of prohibition, writ of mandamus, or writ of quo warranto, or grant declaratory relief against any Federal Board, Commission or other tribunal.

Review of the Year

Supply and Demand

Export restrictions during 1975 resulted in domestic crude oil production capacity being greater than actual production and as a result some productive capacity was shut in. Canadian production of crude oil, including natural gas liquids, averaged an estimated 1,780,000 barrels per day as compared with the 1,994,000 barrels daily average for 1974. Licences issued through the year for the exports of crude oil and equivalent hydrocarbons and most petroleum products covered 282.8 million barrels of crude oil and 69.2 million barrels of petroleum products and partially processed oils. Not all of the quantities licensed for export were shipped during the year.

Production of marketable natural gas increased nominally from 2,421 Bcf (Billion cubic feet) in 1974 to an estimated 2,435 Bcf in 1975. Of this production, 1,343 Bcf were net

sales in Canada while 947 Bcf, or 39 per cent, were exported to the United States. Net sales growth in Canada was only two per cent. Consumption in all provinces changed only marginally from 1974 levels as a result of conservation, the slowdown in economic expansion and substantial price increases later in the year. Exports again declined slightly from the 1974 average of 959.2 Bcf.

Canada's total net electrical generating capability in 1974 was 53,642 MW (Megawatts) of which hydroelectric plants accounted for 36,624 MW; coal, oil or gas fired thermal capacity 15,243 MW; and nuclear power 1,775 MW. Planned additions in 1975 were 866 MW hydro, 4,304 MW thermal and 764 MW nuclear for a planned increase of 11 per cent. Total Canadian consumption of electricity in 1975 is estimated to have been 265,000 GWh (Gigawatthours), about the same as in 1974.

	1971	1972	1973	1974	1975 (e)
Petroleum	2936.1	3136.5	3278.6	3338.1	3357.2
Natural Gas	1337.8	1530.3	1638.1	1658.9	1689.6
Hydro-Electricity	541.1	589.4	622.5	678.6	714.1
Nuclear-Electricity	13.6	23.0	48.6	47.3	36.7
Total	4828.6	5279.2	5587.8	5722.9	5797.6

(e) estimates

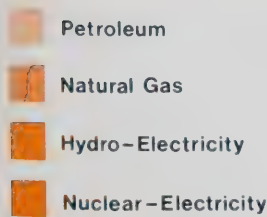
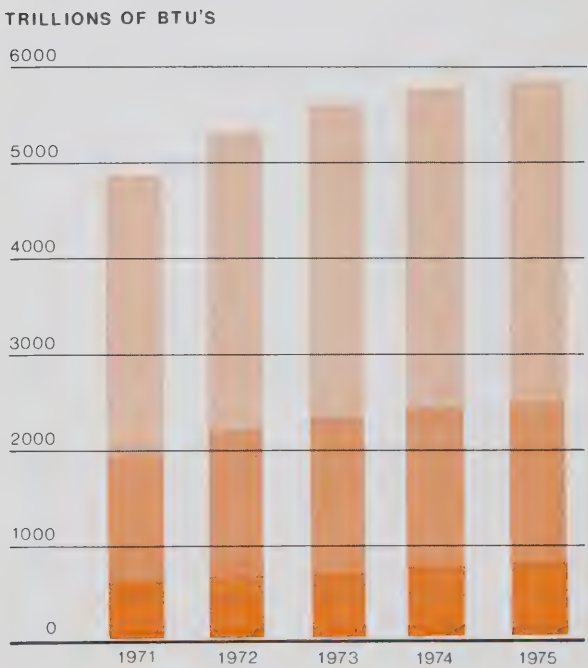


Figure 1: Canadian Consumption of Energy



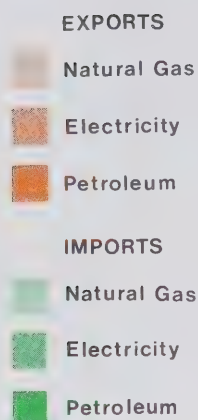
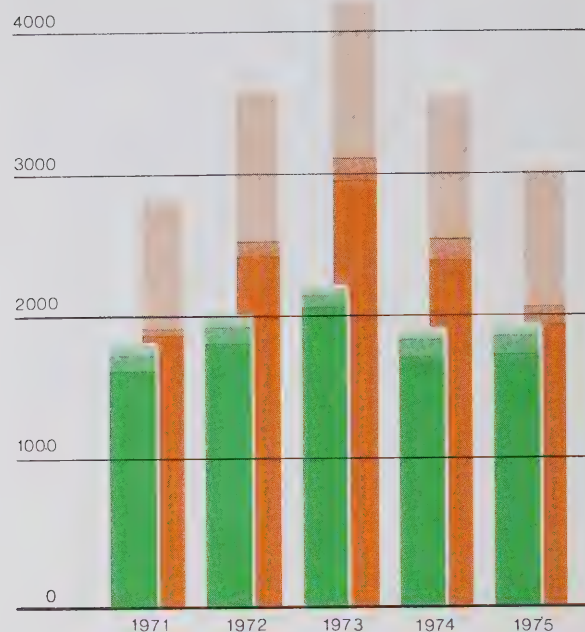


Figure 2: Exports and Imports of Electricity, Natural Gas and Petroleum

TRILLIONS OF BTU'S



	1971	1972	1973	1974	1975 (e)
Exports					
Natural Gas	944.1	1045.0	1064.0	992.8	980.0
Electricity	69.7	110.4	162.9	154.0	113.4
Petroleum	1844.1	2467.5	2998.6	2437.0	1954.0
Total	2857.9	3622.9	4225.5	3583.8	3047.4

(e) estimates

	1971	1972	1973	1974	1975 (e)
Imports					
Natural Gas	14.8	16.2	15.3	13.8	11.3
Electricity	33.8	23.8	22.5	24.4	41.6
Petroleum	1768.9	1960.6	2152.5	1882.5	1891.4
Total	1817.5	2000.6	2190.3	1920.7	1944.3

(e) estimates

Oil and Gas Reserves

The Board's estimate of established remaining reserves of crude oil as of December 31, 1974, is 6,877.9 million stock tank barrels.

The Board's estimate of established remaining reserves of marketable natural gas in the conventional producing areas as of December

31, 1974, is 59.8 Tcf (trillion cubic feet) at 1000 Btu/cf.

More detailed information is available from the following Board reports published during 1975—"Canadian Oil—Supply and Requirements" and "Canadian Natural Gas—Supply and Requirements".

It has frequently been alleged that the Board has allowed itself to be misled by the petroleum industry as to the quantities of hydrocarbons available in Canada. The Board's frequent reviews of this subject show that this argument is based largely on a misunderstanding of the terms "established reserves" and "ultimate potential". The latter has been commonly misnamed "potential reserves".

The Board requires that established reserves be in *known* reservoirs and be considered economically recoverable with a high degree of certainty.

An estimate of ultimate potential, on the other hand, is a judgement, based on information available at the time, as to the total quantity of hydrocarbons that *may* exist in an area. This quantity is not necessarily economically recoverable nor does definition require that any part of it has in actual fact been discovered. The Board places no reliance whatsoever on estimates of "ultimate potential" or "potential reserves" in any aspect of its regulatory activity, nor has it ever done so.

The Board in its April 1975 report on natural gas supply and requirements stated its preference for the use of the term "ultimate potential" rather than "potential reserves", since it is quite apparent that there is no justification for describing undiscovered volumes of hydrocarbons as reserves. The Board believes that much of the confusion responsible for criticisms expressed would be eliminated if this nomenclature were universally adopted.

The Board fully appreciates that ultimate potential estimates involve considerable speculation so that it should come as no surprise when such estimates change, often radically, and most often in a downward direction, with new information. It is unfortunate and quite unjustifiable when a reduction in an ultimate potential estimate is misinterpreted as a previous overestimation of

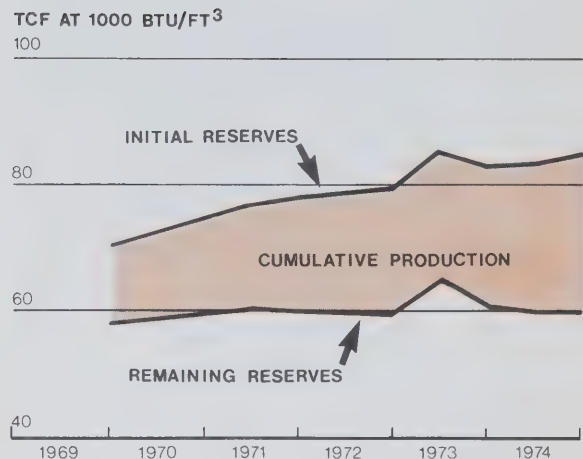


Figure 3: Established Reserves of Marketable Natural Gas from Conventional Producing Areas

established reserves. Ultimate potential estimates have their value to the industry which must decide where to spend exploration dollars; these estimates are not used by this Board.

From December 31, 1969, the effective date of reserves estimates used in the Board's August 1970 decision to recommend additional volumes of natural gas for export, to the end of 1974, 14.4 trillion cubic feet were added to initial established reserves of natural gas in the conventional producing areas alone (figure 3). This is 2.4 trillion cubic feet more than production for the period, and more than twice the 6.3 trillion cubic feet authorized for export as a result of the 1970 decision. Had it not been necessary to reduce by some 2 trillion cubic feet the reserves of British Columbia and the Northwest and Yukon Territories at year-end 1973 to reflect anticipated production problems in certain major fields, reserves additions experienced over the 5-year period would have been correspondingly higher.

Deliverability problems are a related but separate matter and are dealt with later in this report.

Public Hearing

During 1975, the Board conducted all or part of seventeen public hearings in various locations from Vancouver, British Columbia to Quebec City, Quebec. In total the Board sat for 110 days of public hearings on matters which ranged from one-day public hearings on authority for land expropriation to the commencement of proceedings in October on the Mackenzie Valley natural gas pipeline applications.

The most significant of these hearings in terms of general public interest and the recommendations resulting from those which have been completed are dealt with in detail in the "Operations Review" section of this report. They include:

- Natural Gas Supply & Requirements hearing, and the resulting report which indicated the possibility of a shortfall in supply to meet both domestic and export commitments in the late 1970's until new reserves are developed and brought on stream;
- TransCanada Pipelines rate hearing, following which the Federal/Alberta Gas Prices Agreement was concluded;
- Interprovincial Pipe Line Limited application to construct an oil pipeline from Sarnia, Ontario to Montreal, Quebec was approved and a certificate authorizing construction was issued;
- Canadian Oil: Supply and Requirements hearing, and the resulting report which set a lower export level for oil than that established in the 1974 Report in the Matter of Exportation of Oil;
- Joint Hearing on Mackenzie Valley natural gas pipeline projects, encompassing two major competing projects involving five applications, which commenced in October, 1975.

The Board issued 2,662 certificates, licences, permits, orders and authorizations during 1975.

Litigation

On April 17, 1975, the National Energy Board appointed Marshall A. Crowe as Chairman and Jacques Farmer and William A. Scotland as members of a panel to hear applications for the construction of a Mackenzie Valley natural gas pipeline.

On July 9, 1975, Canadian Arctic Gas Pipeline Limited (ARCTIC GAS) expressed concern about the composition of a panel hearing the applications for a Mackenzie Valley pipeline, should the Chairman of the Board be a member of this panel.

The concern expressed by Arctic Gas was based upon the fact that Mr. Crowe, before his appointment as Chairman of the Board, was Chairman of the Canada Development Corporation, which, at that time, was one of the members of the Gas Arctic-Northwest Project Study Group. In that capacity, until his resignation on October 15, 1973, he had participated in the work of the Study Group.

Arising out of this expression of concern, the Board decided to make public all facts concerning Mr. Crowe's association with Canada Development Corporation and the Study Group before his appointment to the chairmanship of the Board. Correspondence between the Board and Arctic Gas ensued and, as a result, Arctic Gas, during the period shortly after September 15, 1975, provided all interested persons with copies of the minutes of all the Study Group committee meetings attended by Mr. Crowe.

Under cover of a letter dated October 15, 1975, the Board sent all interested persons a copy of the statement Mr. Crowe would and in fact did read at the commencement of the hearing on October 27, 1975, setting out the facts of his association with the Study Group.

Of the eighty-eight interested persons at the Hearing, only five persons objected to Mr. Crowe's sitting. Of those five, only three pressed the matter.

As a result of these objections, the Board decided that it would itself refer the question whether the objections were valid to the Federal Court of Appeal for determination. The question posed to the Court was

"Would the Board err in rejecting the objections and in holding that Mr. Crowe was not disqualified from being a member of the panel on the grounds of reasonable apprehension or reasonable likelihood of bias?"

The Mackenzie Valley Pipeline Hearing continued pending the decision of the Federal Court of Appeal. On December 12th the Federal Court of Appeal determined the matter in favour of the Board answering the referred question in the negative.

Membership of the Board

Mr. C.G. Edge, a member of the Board since 1970, was appointed Associate Vice-Chairman of the Board on November 13, 1975. At the present time the Board is one member short of its authorized complement of nine.

Budget and Manpower

The Board operates on the basis of the fiscal year which covers the period from 1 April to 31 March insofar as its financial and manpower resources are concerned. During the fiscal year 1975-76 the Board's budget is \$7,950,000 with a man year allocation 321. During the 1974-75 fiscal year the budget was \$6,288,000 with 295 man years.

Official Languages Act

During the year the Board has increased its efforts to improve its capability to provide service in both official languages, and to promote the use of both official languages in its internal organization. All public hearings of the Board, in Ottawa and across Canada, are conducted in both official languages and simultaneous translation services are provided. Forty-four employees of the Board began or continued language training during the year and two Units Working in French were established within the Board.

Exploration and Development Activity

Oil and Gas

Exploration drilling in the conventional producing areas of Western Canada during most of 1975 continued at essentially the same level as in 1974, with an upswing during the last two months. Year-end preliminary estimates indicate that approximately 1,600 exploratory wells were drilled in 1975, compared with 1,700 in 1974. Although there was a decline in exploration expenditures in 1975, indications are that these will increase in 1976. The upswing in drilling activity at the end of 1975 can be directly attributed to higher prices for oil and gas, which, together with favourable changes in government fiscal policy, both at the provincial and federal levels, have resulted in an increased flow of funds for exploration.

Year-end estimates show that more than 2,200 development wells were drilled during 1975 in the conventional producing areas, essentially unchanged from last year.

In the frontier areas, drilling activity declined for the second consecutive year. 51 wells were drilled in the Mackenzie Delta, Arctic Islands, and the East Coast offshore areas compared with 63 in 1974.

The following is a resumé of the more significant exploration events which took place during the year and their locations are identified on the accompanying map.

In Alberta, the only potentially major find was a Mississippian gas discovery at Limestone Mountain (No. 1) in the central foothills region. This well is approximately eight miles northwest of the Burnt Timber-Willson Creek Mississippian gas discovery made in 1974, and is probably part of this field. Also in the west central sector, significant extensions were made to existing gas fields at Stolberg (No. 2), Erith (No. 3) and Rosevar (No. 4), the latter being the most striking in terms of added reserves. Considerable development of shallow gas occurred in the northwest portion of the province in the Peace River area (No. 5) as a follow-up to discoveries and extensions made in 1974. Development of the shallow gas reserves of eastern Alberta (No. 6) continued.

Exploratory drilling in Saskatchewan continued in the western and west-central part of the province mainly for shallow gas. Preliminary reports indicate that a significant oil discovery was made at Dome et al Tableland (No. 7) 120 miles southeast of Regina. The productive zones are reported to be in the Winnipegosis of Middle Devonian age and the Mississippian. There was development drilling in the Golden Lake and Unity (No. 8) heavy oil areas, and the Hatton, Horsham, Liebenthal (No. 9) shallow gas region.

In Manitoba, there was no exploration development of particular significance during 1975. Drilling activity was nominal.

Activity in British Columbia virtually came to a standstill at mid-year 1975. Following changes in provincial government regulations and gas pricing there was a resurgence of exploratory activity toward year-end, with operations scheduled for the Helmet and Thetiaandoo areas, (No. 10).

One oil and gas discovery was made in the Mackenzie Delta, Sun SOBC BVX et al Garry P-04 (No. 11) eight miles east of the Adgo field. The significance of this discovery cannot be determined without further drilling, but it is considered encouraging. Two stepout wells drilled in this area found gas, while one also encountered oil.

In the Arctic Islands there were no new discoveries, but a follow-up at Bent Horn on Cameron Island (No. 12) flowed oil on tests. Although very encouraging, the full significance of this oil accumulation cannot be fully appraised without further drilling. Further delineation drilling continued in the Drake Point (No. 13) and Hecla (No. 14) fields on Melville Island.

Exploration drilling in the East Coast offshore resulted in encouraging hydrocarbon shows at Eastcan Snorri I-90 (No. 15) 135 miles northwest of the Bjarni gas discovery on the Labrador shelf. Wells (No. 16) drilled offshore Nova Scotia, Labrador, Newfoundland and in the Bay of Fundy were unsuccessful.



Oil and Gas Developments

Miles
0 100 200 300 400 500 600

FIGURE 4

1. Limestone Mt. (Mississippian Gas Discovery)
2. Stolberg (Mississippian Gas Development)
3. Erith (Devonian Gas Development)
4. Rosevear (Devonian Gas Development)
5. Peace River Area (Continued Gas Development)
6. Southeastern Alberta (Shallow Gas Development)
7. Tableland (Devonian and Mississippian Oil Discovery)
8. Golden Lake, Unity (Oil Development)
9. Southwestern Saskatchewan (Shallow Gas Development)
10. Helmet-Thetlaandoa (Exploratory Drilling)
11. Garry (Gas Discovery)
12. Bent Horn (Flowed Oil on Tests)
13. Drake Point (Gas Development)
14. Hecla (Gas Development)
15. Snorri (Hydrocarbon Shows)
16. East Coast Offshore (Abandonments)

Operations Review

OIL AND PETROLEUM PRODUCTS

The year 1975 saw a continued weakness in the demand for oil products. There was virtually no growth over the demand of the previous year. Unfavourable economic conditions and labour unrest reduced the consumption of industrial fuels but conservation measures and the public's appreciation of the need for fuel economy probably also contributed to holding down the growth in demand.

Imported petroleum remained in ample supply, unhampered by the embargoes and uncertainties of previous years; the cost of imports continued to rise but at a less rapid rate than before.

In his June Budget speech, the Minister of Finance announced that the wellhead price of Canadian crude oil and equivalent hydrocarbons would rise by \$1.50 to \$8.00 per barrel effective July 1, 1975, in conformity with the policy of a phased adjustment to higher world energy prices. In the same Budget, provision was made for a special federal excise tax of 10 cents per gallon on gasoline for personal use, to aid in providing revenues for the oil import compensation program, itself another facet of the policy of phased price adjustments.

The Technical Advisory Committee on Petroleum Supply and Demand, a government-industry committee formed late in 1973 under Board chairmanship in order to advise the Minister of Energy, Mines and Resources on petroleum supply matters, met only once in 1975. At that meeting, in April, a recommendation was adopted that the Committee should be put on a standby basis, ready to be recalled should significant difficulties develop.

Crude Oil Production, Exports and Imports

Production in 1975 of crude oil and natural gas liquids averaged an estimated 1,780,000 barrels per day, which was 214,000 barrels per day, or 10.8 per cent, lower than in 1974.

The decline in production was the direct result of the policy of gradually phasing out crude oil exports, which at an estimated average level of 707,000 barrels per day were nearly 200,000 barrels per day, or 22 per cent below the level of 1974. The export level fluctuated considerably over the year, from a high of 813,000 barrels per day in January, to a low of 482,000 barrels per day in May.

The substantial movements of Canadian crude oil to eastern Canada via the Panama Canal and the St. Lawrence Seaway were not repeated in 1975; they had been necessary during the early months of 1974 because of the reduced availability of foreign crude following production cutbacks by some exporting countries. Imports of crude oil and equivalent to Eastern Canada rose to an estimated 844,500 barrels per day compared with 797,700 barrels per day in 1974.

Refined Products Supply

Refinery crude runs averaged an estimated 1,721,000 barrels per day during 1975, which was 64,400 barrels per day less than in 1974, a decrease of some four per cent. Refined product imports at 46,000 barrels per day were little more than half the 1974 level.

Refined Products Demand

The lower refinery runs and reduced product imports in 1975 were not reflections of weakened demand; rather they appeared to be reactions of suppliers to unusually high inventories at the beginning of the year. Despite a marked decline in overall economic activity and the impact of conservation measures, total demand within Canada for petroleum products remained at virtually the same average level in 1975 as in 1974, viz. about 1,740,000 barrels per day. However, within the total there were considerable variations in demand, both between particular products, and between geographical regions. Thus, demand for motor gasoline rose by over four per cent to an average 590,000 barrels per day, while heavy fuel oil sales fell six per cent to 275,000 barrels per day. A prolonged strike in

the forest industries of British Columbia, combined with reduced economic activity in the rest of the country, appear to have caused the reduction in heavy fuel oil demand.

Charges on Licensed Exports

Export charges imposed during 1975 are reported on the schedule in Appendix XVIII. The Board's periodic determination of the just and reasonable price for exports of oil is a principal factor in the level of the charge. The differentials introduced on November 1, 1974 to facilitate the competitiveness of specified Canadian heavy crude oils were continued throughout 1975, in amounts recognizing the seasonal fluctuations in demand for such heavy crudes. Correspondingly, market conditions were reflected in the export charges applicable to different categories of refined product. On August 1, 1975 partially processed oils were included within the system, and for the remainder of the year were subject to the same levels of export charge as light and medium crude oils.

Canadian Oil Supply and Requirements Hearing

The supply and demand outlook for oil was summarized in the Board's "Canadian Oil Supply and Requirements Report" of September, 1975.

	1971	1972	1973	1974	1975 (e)
Canadian Production	1476.0	1698.4	1962.9	1843.3	1623.1
Exports	750.8	951.3	1148.0	907.0	707.3
Imports	671.1	769.6	883.7	797.7	844.5

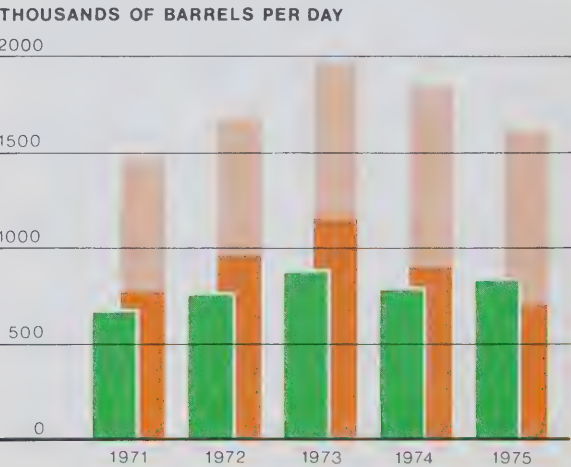
(e) estimates



This report, which set forth the Board's findings as a result of public hearings in Calgary and Ottawa in the spring of the year, was an update of the 1974 report on the same subject. The hearings were held primarily to enable the Board to administer the oil export control program. The oil producibility forecast in this report was expanded from the 1974 version by preparing a producibility forecast by individual pipeline systems instead of forecasting producibility by province. The demand section was also considerably expanded to include petroleum demand by product with and without consideration being given to energy conservation.

In the final analysis, the report showed a significant shift in the outlook compared to the previous year's report. The time of occurrence of the anticipated shortfall in domestic crude oil supply to meet domestic demand shifted from year-end 1983 to late 1982. The major change in the supply availability picture results from lower anticipated producibility from established reserves and reserves additions and a changed outlook for the rate of oil sands development.

Figure 5: Crude Oil and Equivalent Hydrocarbons Production, Imports & Exports 1971 to 1975 (estimated)



A shortening of the period of protection must be regarded as serious, especially in view of the long lead-times required to develop new sources of domestic supply. The report stresses the commitment necessary by industry and government to pursue alternatives to meet Canada's long-term oil requirements, and the need for encouragement to conserve existing energy resources.

Following publication of the report, the government announced the intention to reduce exports of crude oil in 1976 by an estimated average of 240,000 barrels per day, which constitutes almost one third of the total sales to the United States in 1975.

Oil Pipeline Extensions

Interprovincial Pipe Line Limited, after obtaining a certificate of public convenience and necessity in May of 1975, began construction of the 518-mile pipeline extension from Sarnia, Ontario to Montreal, Quebec.

Although many difficulties were experienced due to the unfavourable climatic conditions during the fall, approximately three-quarters of the extension has been completed. It is expected that the extension will be capable of delivering oil to Montreal in 1976.

The Board received complaints from various landowners whose land was crossed by the pipeline. These complaints included concerns dealing with rerouting of the pipeline; possible damage to agricultural soils; irritating noise; possible disruption to subsoil, water drainage and tile drains; cutting of trees; and possible slumping of top soil into the open ditch. In all cases the complaints were investigated and dealt with by the Board's on-site inspectors or the Board's staff in Ottawa. These inspection services were provided by the Board at an approximate cost of \$34,000 (excluding salaries) in the last quarter of 1975, and it is anticipated that additional inspection costs will be incurred in 1976 until completion of this pipeline inspection.

In addition to existing inspection commitments, the pipeline group of the Board formed a special inspection section to meet its commitment to provide inspectors for the Interprovincial Pipe Line Sarnia to Montreal extension. This team of inspectors will now form the nucleus of an inspection unit to handle pipeline inspections throughout Canada, and will work in close association with the Board's Environment Group.

Staff of the Soil Research Institute of Agriculture Canada provided advice to the Board regarding soil conditions along the right-of-way and restoration of soils, in connection with the construction of the Interprovincial Pipe Line Sarnia to Montreal extension.

Trans-Northern Pipe Line Company installed 13.5 miles of pipeline in order to transport jet fuel to the recently completed Mirabel Airport. The Board's inspectors checked the installations both during and after construction to ensure that the Board's regulations and orders were being followed.

Pipeline Regulations

A set of draft oil pipeline regulations was developed and circulated to industry and other interested parties for comment. These regulations are being formulated for eventual submission to the Department of Justice. Inspection procedures are being developed for the use of Board staff and others in regard to pipelines.

Pipeline Incidents

Various pipeline incidents occurred on the facilities under the Board's jurisdiction. Investigation and study of oil spillage in two instances resulted in the adoption of procedures to minimize the possible hazard to the public.

Rates and Tariffs

On 1 April 1975, the Board informed Interprovincial Pipe Line Limited of its intention to conduct a public hearing to ascertain

whether the tolls charged by Interprovincial are just and reasonable and to ensure that the Company does not make any unjust discrimination in tolls, services or facilities against any person or locality. In response, Interprovincial filed a revised tariff with the Board on 5 December 1975 and this will be the subject of a public hearing in early 1976.

NATURAL GAS

1975 was a year of considerable regulatory change and supply uncertainty in the natural gas industry in Canada. Regulatory change resulted from the imposition of federal and provincial pricing legislation to ensure more equitable pricing of natural gas in Canada in relation to other energy forms. The supply uncertainty was reflected in evidence submitted to the Board and assessed in the Board’s report on natural gas supply, demand and deliverability, which concluded that deliverability problems and resulting shortfalls in supply may occur during the late 1970’s. The year was also one of transition in the gas industry. There were some indications by year-end that drilling activity and discoveries of gas in Western Canada might, in total, lead to new supplies of natural gas becoming available

in the future in sufficient quantities to reduce significantly any supply shortfalls that might arise in the late 1970’s, particularly in the light of some signs that growth in demand could be less than earlier expectations.

Natural Gas Production and Consumption

Production of marketable natural gas increased slightly from 1974 levels. Demand levelled off, with the greatest change in growth rates occurring in Quebec, whose estimated 3 per cent growth from 1974 to 1975 contrasts markedly with the 25 per cent growth rate of the previous year. During the latter part of the year, industrial sales in Ontario declined substantially, reflecting both decreased growth in industrial activity and the increase in Toronto city-gate prices to bring natural gas prices closer to commodity value equivalency with crude oil.

For Canada as a whole, commercial use again recorded the largest gain in sales, estimated at 3.6 per cent over 1974. Residential use increased only about one per cent while industrial consumption began to decline. Sales in all categories had substantially lower growth rates than in 1974.

	1971	1972	1973	1974	1975
					(e)
Canadian Use	1109.8	1277.6	1412.0	1461.6	1488.3
Exports	912.2	1009.7	1027.9	959.2	946.9
Total*	2022.0	2287.3	2439.9	2420.8	2435.2

(e) estimates
*Marketable pipeline gas

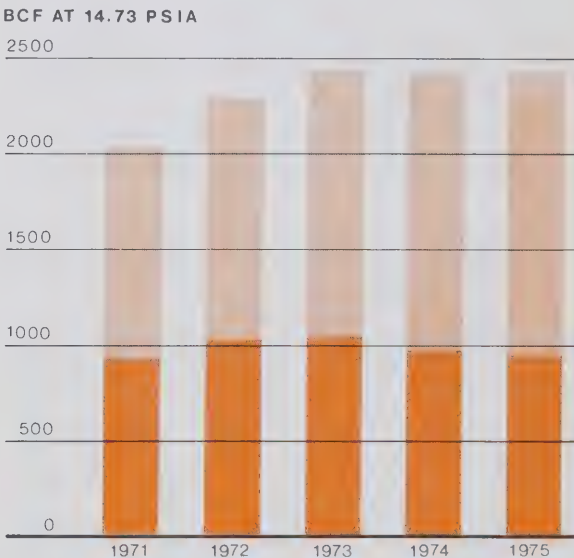


Figure 6: Natural Gas Production

Domestic Natural Gas Pricing

New responsibilities were assigned to the National Energy Board during 1975 with the enactment by Parliament of the Petroleum Administration Act (P.A.A.) which received Royal Assent on the 19th of June, 1975. Part III of the P.A.A. is concerned with domestic natural gas prices and provides authority for measures enabling the Government, as far as may be practicable, to achieve a uniform price, exclusive of transportation and service costs, for gas used in Canada outside the province of production, and to maintain a reasonable balance between the prices of alternative fuels in Canada. The Act is also intended to help achieve a balance between the interests of consumers and producers in Canada, while at the same time encouraging the development of a supply of natural gas adequate to Canadian self-sufficiency.

The Act provides, *inter alia*, for the Minister to enter into an agreement with the government of a producer-province to establish mutually acceptable prices for natural gas from that province during an agreed period. Such an agreement, concluded in October, between the federal government and the government of Alberta, provided for the pricing of natural gas sold to distributors in Canada from 1 November 1975, to be based upon a Toronto city-gate reference price of \$1.25 per million British Thermal Units (MMBTU), which is equal to approximately one thousand cubic feet (Mcf). The \$1.25 was approximately 85 per cent of the commodity value equivalent of crude oil delivered at Toronto.

The Board has been assigned the responsibility for administering the provisions of Part III of the Petroleum Administration Act. This involves prohibition of the sale of gas outside its province of production unless the price paid is a prescribed price, prohibition of the purchase or sale of gas within a producer-province for consumption outside that province, or the movement of any gas outside its province of production unless the price paid is approved by special or general orders of the Board, and the

requirement that certain records and reporting information be maintained by vendors and purchasers of gas.

In the fall of 1975, the Board recommended to the Governor in Council the various prices which should be prescribed under the Act for gas to be sold in the various areas and zones in Canada, outside the province of production, with effect from 1 November, 1975.

The Board has also issued twenty general or special orders approving various prices paid to acquire gas in Alberta and the Yukon and Northwest Territories for sale elsewhere.

Canadian Natural Gas Supply and Requirements Hearing

The Report on Canadian Natural Gas Supply and Requirements was released on 15 July 1975. It was prepared following extensive public hearings held across Canada in late 1974 and early 1975. Some 62 submissions were received by the Board during that period.

The evidence which gave considerable weight to the deliverability of gas as well as the resource base, indicated that natural gas supplies would not be adequate in the near term to meet both projected increases in domestic demand and existing export commitments.

The submissions narrowed the estimates of the time when frontier gas, if available, would be needed by Canadians. There remained major uncertainties concerning the size of the resource base in the Canadian north, the rate of new discoveries which could be expected and the cost of the gas if delivered to markets. The evidence indicated that even if export commitments were abrogated, gas from conventional producing areas would still be insufficient to meet Canadian requirements by the mid 1980's.

The Board made four types of recommendations. First were proposals for improving deliverability in Alberta and British Columbia; second, for raising prices in Canada, which would have an effect on curbing demand and stimulating supply; third, the report recommended the creation of new powers to allocate gas in Canada; and fourth, it indicated action to be taken to condition existing export commitments so that priority can be given to Canadian requirements.

The report noted that the size and timing of any potential shortage could not be absolutely identified, because of the inherent difficulty in measuring consumer response to the impending price increases and the government conservation measures. Reappraisal of the situation later in the year revealed that supply to meet both domestic requirements and existing export commitments for the 1975-76 winter peak was adequate except for the shortage being experienced in the Beaver River field in northern British Columbia.

In 1976, however, the situation could become more serious again if business activity improves and demand increases placing additional pressure on the already tight supply position.

Natural Gas Exports

Net exports of natural gas to the United States totalled 947 Bcf for the year. This volume is approximately the same as the export volume during 1974.

An amendment to TransCanada Pipelines export licence GL-19 was approved in January, 1975. The amendment provided for an increase in the maximum daily volume exportable from 17.7 MMcfd (Million cubic feet per day) to 20.7 MMcfd. No changes were made to the annual volume and the total volume included in the licence.

The Canadian Lowell Gas Company applied to import 1.5 Bcf of United States gas for storage by Union Gas Limited in Ontario during the

summer and for re-export during the winter. Following a hearing on February 25, the Board approved the application subject to Canadian Lowell being able to obtain the requisite authorization from the Federal Power Commission of the United States. The required authorization was not granted.

Canadian-Montana applied, during March, for an amendment to GL-25 to allow it to continue to export at its Aden export point. The Board agreed to an extension but reduced the maximum annual rate of exports at Aden by 50 per cent to 10 Bcf. These exports are to be charged against the total volume of gas that Canadian-Montana is allowed to export under an existing licence.

Gaz Métropolitain, inc. applied during March, 1975 to export 20,000,000 U.S. gallons of liquefied natural gas (equivalent to approximately 1.75 Bcf of natural gas). The application was denied on the grounds that the export would be contrary to the Canadian public interest at a time when the demand for gas in Canada was not being fully satisfied. A later application made during August for the export of a smaller volume was also denied.

Natural Gas Export Price

The Board conducted a hearing in the spring of 1974 into the pricing of Canadian natural gas being exported under existing licences, and recommended to the Governor in Council that natural gas being exported to the United States should be priced on the basis of its being a scarce, non-renewable natural resource and with the price increasing progressively towards commodity value. In supporting the Board's recommendation, the Government also endorsed the principle of further price increases, although there was no commitment as to the scale or timing of such increases. The Government approved a new export price of \$1.00 per Mcf (Thousand cubic feet) to commence on 1 November 1974 for gas exported by Westcoast Transmission Company Limited under Licence GL-41, and to commence on 1 January 1975 for all other natural gas exports.

Early in 1975 the Board undertook a new examination of the natural gas export price. All parties that participated in the 1974 hearing were asked to up-date their 1974 submissions on the pricing of competitive fuels in export markets served by Canadian natural gas. This study resulted in a further report to the Governor in Council in March, 1975. Among its conclusions, the Board noted that it estimated, on average, the commodity value of Canadian gas in export markets to be some 20 cents per Mcf higher than that derived by the Board in the spring of 1974, and that higher prices in domestic and export markets should stimulate the connection of reserves and assist in maintaining deliverability, as well as providing the incentive to find new sources of supply. The Government, in accepting the Board's report, approved new export prices of \$1.40 per Mcf with effect from 1 August 1975, and \$1.60 per Mcf, effective 1 November 1975, except for gas exported under GL-29, for which an export price of \$1.30 per Mcf was approved. The Board recommended and the Governor in Council approved a further exclusion applicable to winter peaking gas exported under GL-6 and GL-19 and the "Pan-Alberta gas" exported under GL-41 which are moving at higher contract prices than the current border price. In approving the new export prices, the Government confirmed that the additional export revenues so generated should be paid to gas producers in order to encourage additional exploration and production.

Rates and Tariffs

Two rate applications by TransCanada PipeLines Limited were heard. In the first decision the Board allowed an increase of 1.4¢/Mcf (cents per Thousand cubic feet) for average transportation charges from the wellhead in Alberta to southern Ontario and Quebec. The decision on the second application, which was heard in two parts, allowed an increase of 9.4¢/Mcf to 42.186¢/Mcf for average transportation charges from the Alberta border to southern Ontario and Quebec as of December 1, 1975.

The Government of Canada and the province of Alberta entered into an agreement respecting the pricing of natural gas effective 1 November 1975, pursuant to the provisions of the Petroleum Administration Act. The decision on TransCanada's second rate application approved rates and tolls which were compatible with prices prescribed under the Petroleum Administration Act.

TransCanada Coal Gasification Project

With a possible shortfall in natural gas supplies, coal gasification technology possesses some potential for application in Canada.

In August 1974, TransCanada PipeLines Limited made an application to include the cost of a feasibility study for an integrated coal gasification project in its rate base. The Board set this application down for hearing on 21 January 1975 and concluded the hearing on 23 January 1975. The Applicant stated that the gasification of coal offers a reliable source of supply of synthetic natural gas but felt that six to seven years would be required to develop a coal gasification project which would supply seven per cent of its overall requirements by 1982.

The Board denied the application in a decision published in May, 1975. In its decision, the Board stated that this is not to be taken as an opinion on the feasibility of coal gasification per se, nor is it a reflection of the Board's views on TransCanada's endeavours to supplement its future gas supplies. Rather, the decision stems from a failure of the Applicant to demonstrate to the satisfaction of the Board in this particular rate-making proceeding that the probability of future benefits accruing to TransCanada's customers is such as to warrant an advance ruling by the Board that they, the customers, should bear the entire cost of the feasibility study.

Natural Gas Pipeline Extensions

In 1975, authorization of gas pipeline construction under the jurisdiction of the Board was limited in the main to the Westcoast Transmission Company gathering system and the TransCanada PipeLines looping program.

Westcoast Transmission Company obtained the Board's approval to construct 47.6 miles of pipeline in the Peace River District of British Columbia as an extension to its existing Fort Nelson gathering system. This addition was intended to alleviate a shortfall in supply resulting from deliverability problems in the Beaver River field in northern British Columbia.

TransCanada PipeLines Limited was granted authority to construct in 1976, 31.9 miles of 24-inch pipeline in Ontario; 16 miles of 24-inch pipeline in Quebec and 17 miles of 16-inch pipeline in Ontario, all of which was designed to enhance the security of portions of the system which includes service to the cities of Ottawa and Montreal.

Safety Regulations

Emphasis placed on the application of safety regulations by the NEB in 1975 included the following:

- two extensive radiographic and two metallurgical investigations of girth weld quality conducted on portions of the TransCanada PipeLines system in Ontario;
- detailed metallurgical and engineering analysis of a Westcoast Transmission Company pipeline failure;
- radiographic investigation of a girth weld and one metallurgical investigation of a rupture on the Interprovincial Pipeline system.

Mackenzie Valley Pipeline Hearing

On October 27, 1975, the Board began a joint hearing on the following matters:

- application by Canadian Arctic Gas Pipeline Limited for a certificate of public convenience and necessity for the construction and operation of a natural gas pipeline;
- applications by Foothills Pipe Lines Ltd., Westcoast Transmission Company Limited and the Alberta Gas Trunk Line (Canada) Limited for certificates of public convenience and necessity for the construction and operation of certain natural gas pipelines;
- application by Alberta Natural Gas Company Ltd. for a certificate of public convenience and necessity for the construction and operation of certain extensions to its natural gas pipeline;
- submission by the Alberta Gas Trunk Line Company Limited.

Export Control of Propane and Butanes

The amount of propane and butane which can be exported from Canada is regulated by the Board through a licencing and order system. No new long-term licences were issued in 1975. The quantities available for export under order are determined for each year (April to March) on the basis of estimated annual Canadian production less estimated Canadian requirements and previously licensed exports. Exports are authorized monthly on the basis of the available supply in the month.

In 1975, exports of propane equalled 49 per cent of net production and exports of butanes 47 per cent of net production.

The minimum export price for these commodities is established monthly by the Board. In 1975, the minimum price for propane ranged from 18 to 23 cents per gallon, and was 21 cents in December. For butanes the range was between 18 and 21 cents a gallon with the lower figure prevailing in December.

ELECTRICITY

Total Canadian consumption of electricity in 1975 is estimated to have been 265,000 GWh (Gigawatthours*), approximately the same as in 1974.

Canada's total net electrical generating capability in 1974 was 53,642 MW (Megawatts) of which hydroelectric plants accounted for 36,624 MW; coal, oil or gas fired thermal capacity 15,243 MW; and nuclear power 1,775 MW. Planned additions in 1975 were 866 MW hydro, 4,304 MW thermal and 764 MW nuclear for a planned increase of 11 per cent.

The lack of growth in electricity consumption in 1975 is attributed to the slowdown in economic activity, price increases and greater emphasis on conservation. Residential and commercial loads have continued to grow at close to

historical rates while the reductions have been in industrial consumption rates. Most utilities expect demand to increase again as industrial production begins to increase.

Utilities which are planning ahead with a ten-year lead time try to avoid giving undue weight to short-term economic fluctuations in forecasting long-term growth rates. Current pressures to reduce capital spending are, however, very difficult to resist and reserve margins may be significantly reduced in the early 1980's. A few years of stable growth will be needed to show whether there have been fundamental changes in the pattern of electricity usage.

*Gigawatthour is a million kilowatthours.

	1971	1972	1973	1974	1975 (e)
Quantity used in Canada	209.5	229.2	247.0	263.6	266.2
Exports	7.0	11.0	16.3	15.4	11.3
Total Generation	216.5	240.2	263.3	279.0	277.6

(e) estimates

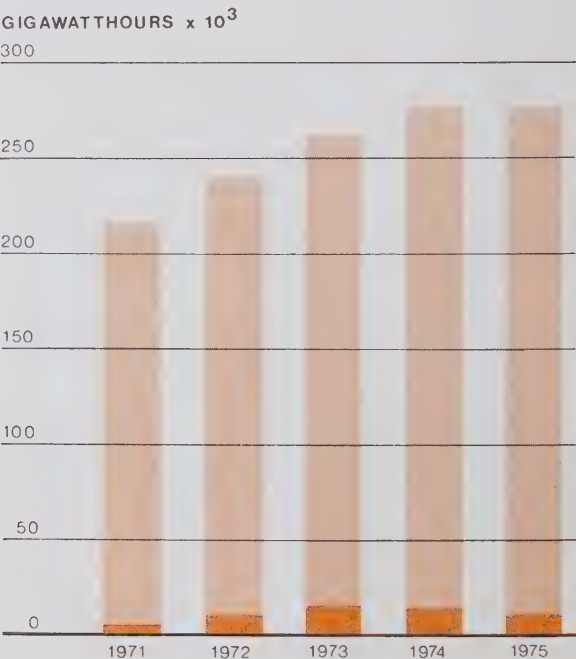
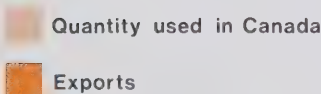


Figure 7: Generation of Electricity

	1971	1972	1973	1974	1975 (e)
Production	209.5	229.2	247.0	263.6	266.2
Imports	3.4	2.4	2.3	2.4	4.2
Total Consumption	212.9	231.6	249.3	266.0	270.4

(e) estimates

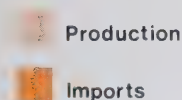
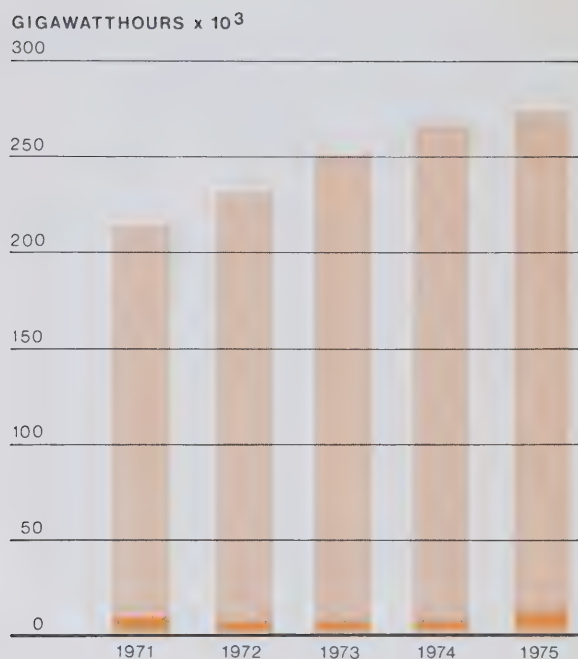


Figure 8: Consumption of Electricity



Exports and Imports of Electricity

The reduction in growth rates was more marked in the United States than in Canada and exports were correspondingly affected. Gross exports of electricity to the United States in 1975 were 11,374 GWh (15,390 GWh in 1974) and estimated imports were 3,986 GWh (2,493 GWh in 1974), resulting in estimated net exports of approximately 7,388 GWh (12,897 GWh in 1974). This represents approximately three per cent of total Canadian generation with an approximate value of \$105 million (\$169 million in 1974). Principal exports were from Ontario, 4,838 GWh, British Columbia, 2,857 GWh, New Brunswick, 1,624 GWh and Manitoba, 1,138 GWh. Additional factors in the reduction of exports from Ontario were the outages at Nanticoke and Pickering generating stations in the winter of 1974/75 which reduced available generating capability by up to 2,500 MW for a period. During that period, Ontario Hydro was able to draw support from the United States.

In 1975, the Board required major utility licencees to report monthly on the primary resources used to generate electricity for export. The returns showed that 37 per cent of these export sales came from surplus hydroelectricity, 27 per cent from imported coal, 6 per cent from imported oil, 5 per cent from Canadian fossil fuels and 12 per cent from other sources such as purchases of power from an adjacent province.

Most electricity exports are made under power pooling or interconnection agreements at prices reviewed annually and subject to approval by the Board. The average price for exports in 1975 was 14.9 mills per kilowatthour (12.9 mills/kWh in 1974).

Interprovincial Transfers of Electricity

Transporting energy in the form of electricity costs much more than oil, gas or coal. However, in spite of the long distances between the major cities in Canada,

interprovincial transfers of electricity continue to be significant. These are encouraged by the Board which requires that all surpluses be offered to neighbouring Canadian utilities before being committed to United States markets.

Responsibility for the full energy development of Churchill Falls was transferred from Labrador to Quebec in 1975 and Quebec in turn supplied substantial quantities to Ontario and New Brunswick. Over 50 per cent of New Brunswick's electricity requirement was provided by Hydro-Québec.

Manitoba Hydro continued to supply about 20 per cent of electricity needs in Ontario Hydro's West System which is too remote from Eastern Ontario to be supplied economically from Ontario Hydro's large scale coal and nuclear fuelled thermal units. Manitoba also displaced some thermal generation in Saskatchewan with surplus hydroelectricity.

The electrical systems of Alberta and Saskatchewan are not interconnected. Both provinces have similar, largely thermal, electric generation which limits the usefulness of an interconnection. Furthermore, because of system stability problems, any interconnection would have to be a relatively high cost direct current link. Alberta has an interconnection with British Columbia and it supplied power to mining loads in Eastern British Columbia which are much nearer to Alberta sources of generation than to B.C. Hydro's main system. Exact figures for interprovincial transfers of power for 1975 are not yet available. Figure 9 shows international and interprovincial transfers for 1974.

Benefits of Power Pool Operation

Because of Canada's sparse population density the major load centres in Canada are usually much closer to load centres in the United States than to neighbouring Canadian load centres. This geographical relationship, together with the seasonal diversity available

because of the summer peaking nature of most United States loads centres, has meant that interconnections with the United States can provide greater benefits in the form of reserve sharing, emergency support and short-term capacity supplies than interconnections with Canadian utilities.

Toronto and Montreal, for example, are in the same time zone and often have their annual peaks on the same day, giving no reliable load diversity between them. However, both Quebec and Ontario can benefit from interconnection with the summer peaking utilities in New York and Chicago. As Canada's power systems gradually become more dependent on thermal generation and as surplus hydroelectricity declines, the mutual benefits of power pool operations spanning the Canada-United States border become more important than simple export sales.

Applications to Export Power

During 1975 the Board held public hearings on three electrical export applications. One by Canadian Niagara Power Company to export both firm and interruptible power was heard in Ottawa and licences were issued. Applications by B.C. Hydro and Cominco Ltd. to export firm and interruptible power were heard in Vancouver and licences issued. In addition, the Board handed down its decision on the application by Fraser Companies Limited, heard late in 1974, and licences were issued.

At the end of 1975, four power export applications were before the Board: namely, from Hydro-Québec to export power to the Power Authority of the State of New York; from Hydro-Québec to export power to three customers in Vermont; from Ontario Hydro to export interruptible energy to utilities in Michigan and New York State; and from Manitoba Hydro to export power to utilities in Minnesota, Wisconsin and North and South Dakota. The Board expects to hear these applications in 1976.

International and Interprovincial Transfers of Electricity for 1974

Miles
0 100 200 300 400 500 600

FIGURE 9



Other Activities

In support of the regulatory activities related to applications, the Electrical Engineering Branch staff completed a system planning study of B.C. Hydro's application for renewal of licences. In addition, planning studies and assessments are continuing on the major applications before the Board. These include the applications by Hydro-Québec, Manitoba Hydro and Ontario Hydro.

The staff also completed two reports: one on a forecast of Canadian gas requirements by electric power utilities 1975-1995 and the other on a forecast of Canadian heavy oil requirements for thermal generation, both in support of the Board's hearings on natural gas and oil. An internal report was also completed on the forecast of Canadian coal requirements of electric power utilities 1975-1980. A report was published on Canadian thermal plant generation, fuel consumption and operating characteristics for the year 1974. The staff also developed a computer program entitled Thermal Generation Price Estimation (ESTPRI) in support of its activities to provide advice on the cost of new thermal plant facilities.

At the request of the Department of Energy, Mines and Resources and the Department of External Affairs a study was made of Canadian planning and operating criteria for large power systems for the Economic Commission for Europe. Also at the request of the Department of Energy, Mines and Resources a member of the staff has been appointed to the Management Committee of the Tidal Power Review Board and is participating in the new investigation related to the feasibility of Fundy tidal power.

The Director of the branch presented a paper written by the staff entitled "Interconnections between Canada and the United States" at a conference organized by the Economic Commission for Europe on the role of electric power in meeting future energy needs. Useful contacts were made with engineers and

economists in European electric utilities and information gained on European electric utilities and information gained on European practices in international cooperation between electric utilities.

FINANCIAL MATTERS

The Board monitored and assessed the financial and economic impact on Canada of various applications for pipeline construction, energy exports and tariff determinations. The Board also maintained surveillance of natural gas and oil export prices, and reviewed and analyzed numerous contractual documents for the purchase, sale and transportation of oil and gas.

The increase in the export price of natural gas during the year 1975 resulted in estimated revenues of \$1,114.8 million, or an increase of approximately 116 per cent over the year 1974.

The Board continued to audit the amounts imposed, levied and collected for oil and oil product export charges authorized under the regulations and procedures of the Petroleum Administration Act. During the year 1975, the Board collected and transmitted to the Receiver General approximately \$1,156.7 million.

Revenues from exports of crude oil and equivalent hydrocarbons and petroleum products in 1975 amounted to an estimated \$3,792.5 million compared to \$4,119.1 million in 1974, or a percentage decrease of 7.9 per cent. This decrease flowed from the lower export volumes for crude oil, equivalent hydrocarbons and petroleum products.

The Board reviewed a variety of reports on the accounting and financial activities of some 22 oil and gas pipeline companies under NEB jurisdiction, and conducted 14 field audits.

	1971	1972	1973	1974 (r)	1975 (e)
Petroleum	897.6	1235.3	1815.3	4119.1	3792.5
Gas	254.7	307.9	358.1	517.2	1114.8
Electricity	52.0	78.4	118.6	193.5	164.8
Total	1204.3	1621.6	2292.0	4829.8	5072.1

(r) revised
(e) estimated

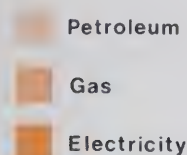
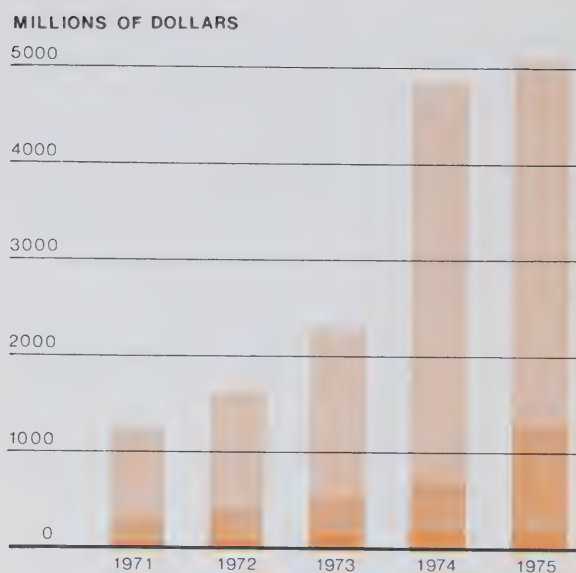


Figure 10: Dollar Value of Exports of Oil, Gas and Electricity



ENVIRONMENT

Protection of the environment is a major concern of the Board in considering applications for certificates, licences and orders. Its inquiries not only reflect public concern about the quality of the environment, but keep pace with the growing body of scientific knowledge on effective control measures.

In considering applications the Board ensures that both the construction and operation of physical facilities meet the environmental requirements and standards of federal and provincial agencies.

The environmental requirements of the Board have been made known by amendments to its Rules of Practice and Procedure and Regulations, as well as during public hearings

of specific applications. Environmental requirements for the export of power and for gas pipelines are already included in the Regulations. These amendments require applicants to submit to the Board an assessment of the probable environmental impact of the proposed project and must include a description of the existing environment, together with detailed proposals of the measures to be taken for its protection.

Environmental guidelines for applicants for certificates for the construction and operation of international power lines were issued in 1974 to all electrical companies subject to Board jurisdiction. Environmental guidelines for pipeline applicants were issued on a case by case basis; complete environmental guidelines will be issued in the near future to all pipeline companies subject to the Act.

During 1975 all pipeline and major power export applications were reviewed to assess their environmental impact. Thirteen certificates and orders contained conditions relating to environmental requirements. These projects covering areas in Ontario, Quebec and British Columbia involved the consideration of a wide variety of biophysical settings, interrelationships and interactions. Land use, engineering practices and measures to protect terrain, wildlife and fish, as well as air and water quality and noise levels, were some of the major concerns of the Board in reviewing these applications.

The Board has also been reviewing the environmental aspects of major applications for power export from Ontario Hydro, Manitoba Hydro and Hydro Quebec, as well as applications respecting a Mackenzie Valley gas pipeline.

Organization of the National Energy Board

The Board is divided into seven separate branches, and the following is a brief outline of the responsibilities of these Branches.

Administration Branch

Provides administrative support to the Board, including such functions as personnel, financial, public information, library, computer systems, and executive secretariat services.

Economics Branch

Responsible for energy statistics including supply/demand balances for all sources of energy, short and long term energy forecasts, analysis of market requirements in respect of applications, administration of the propane/butane export allocation program and economic analysis of major energy projects and of the energy industries.

Electrical Engineering Branch

Advises the Board on all matters concerning electric power including regulatory and load studies, construction of international power lines and export of power and energy planning of electric power systems and power generation.

Engineering Branch

Advises the Board on matters of oil and gas exploration, drilling and production. Forecasts trends in oil and gas supply from conventional, oil sands, and synthetic sources. Independently calculates the reserves and deliverability of gas and the reserves and producibility of oil. Responsible for pipeline design, construction, operation, right of way and public safety. Carries out inspection, engineering and economic studies in relation to pipelines and associated facilities. Analyzes and makes recommendations on engineering aspects of construction of oil and gas pipelines and gas processing plants. Responsible for providing environmental advice and assessments respecting the construction and operation of pipelines and power lines and exportation of oil, gas and electric power and other related activities.

The Calgary office of the Engineering Branch is composed of six geologists, five reservoir engineers, an engineering technologist and an office assistant. The staff in Calgary are engaged in the actual pool by pool calculation of gas and oil reserves. The Calgary office also has two pipeline inspectors responsible for Western Canada.

Financial Branch

Provides advice on rates and accounting matters in respect of regulatory and advisory functions. Analyzes and recommends on the financial aspects of construction of oil and gas pipelines, including financial and economic feasibility, methods of financing, financial structure of applicants and Canadian content of projects. Examines the rate structures including methods of rates, tolls and tariff designs of oil and natural gas pipelines and pricing aspects of oil, natural gas and electricity for export. Organizes and conducts field audits of pipeline companies and licensed exporters of oil and gas. Develops uniform accounting regulations for pipeline companies.

Law Branch

Advises the Board on its statutory powers, prepares regulations and rules of procedure, prepares draft amendments to the Act, examines witnesses at hearings, assists in the preparation and review of submissions to Governor in Council, Reasons for Decision, Orders and Certificates and conducts litigation for and on behalf of the Board.

Oil Policy Branch

Acts as the Board's principal staff source of information and advice on national and international matters affecting oil policy. Provides the staff advice and appraisals for the Board's control over licensed exports and export prices of crude oil and equivalent hydrocarbons and petroleum products.

National Energy Board

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J. G. Stabback	Associate Vice-Chairman
C. G. Edge	Associate Vice-Chairman
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A. Cossette Trudel	Member
J. Farmer	Member
W. A. Scotland	Member
R. A. Stead	Secretary and Special Adviser to the Chairman

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J. R. Jenkins	Director General, Planning
M. E. LeClerc	Director General, Special Projects

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Ann Sicotte	Information Officer
T. L. Clairmont	Chief, Personnel Division
R. J. McElroy	Chief, Finance and Administration Services
D. Emmens	Chief, Computer Services Division
G. G. Michaud	Chief, Secretariat Division
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A. L. Kosegi	Assistant Director, Applied Research
J. G. Snaauw	Assistant Director, Special Economic Analysis
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G. Yorke Slader	Assistant Director, Operations Group

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W. Rutherford	Senior Adviser
S. K. Krishnaswami	Assistant Director, Environment Group
J. E. W. Buchholz	Assistant Director, Energy Resources Group

Financial Branch

G. H. Clarke	Financial Adviser
D. G. Harris	Assistant Financial Adviser, Accounting Division
V. M. Thomas	Assistant Financial Adviser, Rates Division

Law Branch

F. H. Lamar	General Counsel
J. M. Hendry	Assistant General Counsel
I. A. Blue	Counsel
P. G. Griffin	Counsel

Oil Policy Branch

P. G. Scotchmer	Director
B. P. Leakey	Assistant Director, Evaluation
W. R. Porter	Assistant Director, Operations

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APPENDIX I

New Certificates of Public Convenience and Necessity Pursuant to Section 44 Issued During 1975

Applicant	Facilities	Estimated Cost	Heard	Certificate Issued	Certificate No.
<i>Natural Gas Pipelines</i>					
1. TransCanada PipeLines Limited	a) Approximately 48 miles of 24-inch diameter pipe and other works in the Provinces of Ontario and Quebec b) Approximately 17 miles of 16-inch diameter pipeline and other works in the Province of Ontario	\$15,500,000	14-15 Aug. 1975	28 Oct. 1975	GC-53
2. Westcoast Transmission Company Limited	"HELMET LINE" a) Approximately 31 miles of 16-inch diameter line of pipe and other works "HELMET EXTENSION" b) Approximately 4 miles of 8-inch diameter line of pipe and other works c) Approximately 13 miles of 10-inch diameter line of pipe and other works all in the Province of British Columbia.	\$11,000,000	12 Nov. 1975	3 Dec. 1975	GC-54
<i>Oil Pipelines</i>					
1. Interprovincial Pipe Line Limited	a) About 520 miles of 30-inch diameter pipeline in Southeastern Ontario and Quebec	\$185,000,000	Ottawa 14, 15, 16, 17, 21, 22 May, 1974, 9, 10 Oct., 1974, and 11 Apr., 1975	21 May 1975	OC-30

APPENDIX II

Exemption Orders Pursuant to Section 49 issued during 1975 Class "B" Construction*

Natural Gas Pipelines

- (1) Alberta Natural Gas Company Ltd, additional pipeline, being a Meter Station and works connected therewith, a 'mainline tap and shut-off valve assembly' and 2,700 feet of 12-inch diameter connecting line, all in the Province of British Columbia. Estimated Cost \$319,635. Order No. XG-1-75, dated 27 March, 1975.
- (2) TransCanada Pipelines Limited, additional pipeline, being a Meter Station and works connected therewith in the Province of Ontario. Estimated Cost \$49,500. Order No. XG-2-75, dated 7 August, 1975.
- (3) Westcoast Transmission Company Limited, approximately 21 miles of 16-inch diameter line of pipe and approximately 1.00 of a mile of 6.625-inch diameter line of pipe, all in the Province of British Columbia. Estimated Cost \$5,107,700. Order No. XG-3-75, dated 6 November, 1975.
- (4) Westcoast Transmission Company Limited, approximately 7.00 miles of 6.625-inch diameter line of pipe and works connected therewith in the Province of British Columbia. Estimated Cost \$842,100. Order No. XG-4-75, dated 11 December, 1975.

Oil Pipelines

- (1) Trans-Northern Pipe Line Company, approximately 13.5 miles of 12-inch diameter line of pipe, approximately 1,200 feet of 16-inch diameter line of pipe and certain new terminal facilities, all in the Province of Quebec. Estimated Cost \$4,000,000. Order No. XO-1-75, dated 15 May, 1975, as amended.

*(This was construction which at the discretion of the Board was the subject of specific exemption orders pursuant to Section 49.)

APPENDIX II — Concluded

Exemption Orders Pursuant to Section 49 issued during 1975 Class "C" Construction*

Natural Gas Pipelines

- (1) Alberta Natural Gas Company Ltd, for certain facilities to be added to its pipeline in the Provinces of Alberta and British Columbia. Estimated Cost \$343,000. Order No. XGM-1-75, dated 17 April, 1975.
- (2) Westcoast Transmission Company Limited, for certain facilities to be added to its pipeline in the Provinces of Alberta and British Columbia, and in the Yukon and Northwest Territories. Estimated Cost \$6,800,000. Order No. XGM-2-75, dated 17 April, 1975.
- (3) Consolidated Pipe Lines Company, for certain facilities to be added to its pipeline in the Province of Saskatchewan. Estimated Cost \$12,000. Order No. XGM-3-75, dated 24 April, 1975.
- (4) TransCanada PipeLines Limited, for certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Quebec. Estimated Cost \$26,600,000. Order No. XGM-4-75, dated 3 July, 1975.
- (5) Petroleum Transmission Company, for certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan and Manitoba. Estimated Cost \$15,000. Order No. XOM-5-75, dated 8 May, 1975.
- (6) Dome Kerrobert Pipeline Ltd. and Pan Canadian Kerrobert Pipeline Ltd., for certain facilities to be added to its pipeline in the Provinces of Alberta and Saskatchewan. Estimated Cost \$103,000. Order No. XOM-6-75, dated 8 May, 1975.
- (7) Dome NGL Pipeline Ltd., for certain facilities to be added to its pipeline in the Province of Ontario. Estimated Cost \$412,500. Order No. XOM-7-75, dated 5 June, 1975.
- (8) Interprovincial Pipe Line Limited, for certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan, Manitoba and Ontario. Estimated Cost \$2,000,000. Order No. XOM-8-75, dated 10 July, 1975.
- (9) Cochin Pipe Lines Ltd., for certain facilities to be added to its pipeline in the Provinces of Saskatchewan and Ontario. Estimated Cost \$13,750. Order No. XOM-9-75, dated 7 August, 1975.

Oil Pipelines

- (1) Montreal Pipe Line Company Limited, for certain facilities to be added to its pipeline in the Province of Quebec. Estimated Cost \$260,000. Order No. XOM-1-75, dated 26 February, 1975, as amended.
- (2) Trans Mountain Pipe Line Company Ltd., for certain facilities to be added to its pipeline in the Provinces of Alberta and British Columbia. Estimated Cost \$2,000,000. Order No. XOM-2-75, dated 20 March, 1975.
- (3) Westspur Pipe Line Company, for certain facilities to be added to its pipeline in the Provinces of Saskatchewan and Manitoba. Estimated Cost \$86,000. Order No. XOM-3-75, dated 17 April, 1975.
- (4) Trans-Northern Pipe Line Company, for certain facilities to be added to its pipeline in the Provinces of Quebec and Ontario. Estimated Cost \$1,000,000. Order No. XOM-4-75, dated 24 April, 1975.

New Certificates of Public Convenience and Necessity Exemption Orders Pursuant to Section 49 Issued During 1975

International Power Lines

- (1) Revenue Canada, Customs and Excise — One international power line which extends from the metering equipment on the premises of Revenue Canada on Cyclone Island in Lake of the Woods in the province of Ontario, to a point on the international boundary line, between the Islands known as "Cyclone Island" and "Oak Island", which point is also referred to as being in the Southeast 1/4 of Section 35, Township 168N, Range 33W, State of Minnesota, United States of America. Order No. XE-1-75.

APPENDIX III

New Licences and Orders to Export Natural Gas, Propane, and Ethane Issued during 1975

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Export Volumes			
			From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)	
A. Licences – Natural Gas Export – Section 82								
1. Canadian Lowell Gas Limited	GL-48	Niagara Falls, Ont.	10/4/75	31/3/88	12,000	1,500	N/S	
B. Licences – Propane Export – Section 82								
None Issued								
C. Licences – Ethane Export – Section 82								
None Issued								
D. Orders Amending Existing Natural Gas Export Licences – Section 17								
Applicant	Order Number	Date of Issue	Comments					
1. TransCanada Pipelines Limited	AO-5-GL-1	20/ 5/75	(i) Amendment requiring that the prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.					
2. TransCanada PipeLines Limited	AO-6-GL-1	27/ 8/75	(i) Amendment changing condition 4 specifying price to be received by the Licensee in amended Licence No. AO-5-GL-1 to correct for certain word omission due to clerical error.					
3. TransCanada PipeLines Limited	AO-7-GL-1	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.					
4. Alberta & Southern Gas Co. Ltd.	AO-5-GL-3	1/ 8/75	(i) Amendment requiring that the prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.					
5. Alberta & Southern Gas Co. Ltd.	AO-6-GL-3	27/ 8/75	(i) Amendment changing condition 4 specifying price to be received by the Licensee in amended Licence No. AO-5-GL-3 to correct for certain word omission due to clerical error.					
6. Alberta & Southern Gas Co. Ltd.	AO-7-GL-3	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.					
7. Westcoast Transmission Company Limited	AO-6-GL-4	20/ 5/75	(i) Amendment requiring that the prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.					

APPENDIX III – Continued

New Licences and Orders to Export Natural Gas, Propane, and Ethane Issued during 1975

Applicant	Order Number	Date of Issue	Comments
8. Westcoast Transmission Company Limited	AO-7-GL-4	27/ 8/75	(i) Amendment changing condition 4 specifying price to be received by the Licensee in amended Licence No. AO-6-GL-4 to correct for certain word omission due to clerical error.
9. Westcoast Transmission Company Limited	AO-8-GL-4	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
10. Canadian-Montana Pipe Line Company	AO-5-GL-5	20/ 5/75	(i) Amendment requiring that the prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
11. Canadian-Montana Pipe Line Company	AO-6-GL-5	27/ 8/75	(i) Amendment changing condition 3 specifying price to be received by the Licensee in amended Licence No. AO-5-GL-5 to correct for certain word omission due to clerical error.
12. Canadian-Montana Pipe Line Company	AO-7-GL-5	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective Nov. 1, 1975
13. Niagara Gas Transmission Limited	AO-9-GL-6	20/ 5/75	(i) Amendment requiring that the prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
14. Niagara Gas Transmission Limited	AO-10-GL-6	29/ 7/75	(i) Amendment changing the numerical item number of the new condition in Order No. AO-8 and 9-GL-6.
15. Niagara Gas Transmission Limited	AO-11-GL-6	27/ 8/75	(i) Amendment changing condition 3(1) specifying price to be received by the Licensee in amended Licence No. AO-9-GL-6 to correct for certain word omission due to clerical error.
16. Niagara Gas Transmission Limited	AO-12-GL-6	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
17. Niagara Gas Transmission Limited	AO-13-GL-6	11/12/75	(i) Amendment requiring that the price received for "Peaking Service" gas by the Licensee shall be in accordance with a specified formula.
18. Alberta & Southern Gas Company Limited	AO-3-GL-16	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.

APPENDIX III – Continued

New Licences and Orders to Export Natural Gas, Propane, and Ethane Issued during 1975

Applicant	Order Number	Date of Issue	Comments
19. Alberta & Southern Gas Company Limited	AO-4-GL-16	27/ 8/75	(i) Amendment changing condition 5 specifying price to be received by the Licensee in amended Licence No. AO-3-GL-16 to correct for certain word omission due to clerical error.
20. Alberta & Southern Gas Company Limited	AO-5-GL-16	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
21. Canadian-Montana Pipe Line Company	AO-3-GL-17	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
22. Canadian-Montana Pipe Line Company	AO-4-GL-17	27/ 8/75	(i) Amendment changing condition 3 specifying price to be received by the Licensee in amended Licence No. AO-3-GL-17 to correct for certain word omission due to clerical error.
23. Canadian-Montana Pipe Line Company	AO-5-GL-17	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
24. TransCanada PipeLines Limited	AO-7-GL-18	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
25. TransCanada PipeLines Limited	AO-8-GL-18	27/ 8/75	(i) Amendment changing condition 5 specifying price to be received by the Licensee in amended Licence No. AO-7-GL-18 to correct for certain word omission due to clerical error.
26. TransCanada PipeLines Limited	AO-9-GL-18	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
27. TransCanada PipeLines Limited	AO-4-GL-19	25/ 2/75	(i) Amendment providing for an increased daily quantity to be exported pursuant to this Licence.
28. TransCanada PipeLines Limited	AO-5-GL-19	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
29. TransCanada PipeLines Limited	AO-6-GL-19	27/ 8/75	(i) Amendment changing condition 5(1) specifying price to be received by the Licensee in amended Licence No. AO-5-GL-19 to correct for certain word omission due to clerical error.

APPENDIX III – Continued

New Licences and Orders to Export Natural Gas, Propane, and Ethane Issued during 1975

Applicant	Order Number	Date of Issue	Comments
30. TransCanada PipeLines Limited	AO-7-GL-19	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
31. TransCanada PipeLines Limited	AO-8-GL-19	11/12/75	(i) Amendment allowing the price to be received for gas sold for Peaking Service to be as established by agreement with Vermont Gas Systems Ltd, dated August 18, 1975.
32. TransCanada PipeLines Limited	AO-10-GL-20	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
33. TransCanada PipeLines Limited	AO-11-GL-20	29/ 7/75	(i) Amendment changing the pricing formula condition of amended Licence No. AO-10-GL-2 to correct for certain word omission due to clerical error.
34. TransCanada PipeLines Limited	AO-12-GL-20	27/ 8/75	(i) Amendment changing the condition specifying prices to be received by the Licensee in amended Licence No. AO-10-GL-20 to correct for certain word omission due to clerical error.
35. TransCanada PipeLines Limited	AO-13-GL-20	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
36. Alberta & Southern Gas Company Limited	AO-4-GL-24	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
37. Alberta & Southern Gas Company Limited	AO-5-GL-24	29/ 7/75	(i) Amendment changing the numerical item number of the condition in Order No. AO-4-GL-24.
38. Alberta & Southern Gas Company Limited	AO-6-GL-24	27/ 8/75	(i) Amendment changing condition 4 of amended Licence No. AO-4-GL-24 to correct for certain word omission due to clerical error.
39. Alberta & Southern Gas Company Limited	AO-7-GL-24	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
40. Canadian-Montana Pipe Line Company	AO-6-GL-25	6/ 5/75	(i) Amendment to change the daily and annual export quantities in Licence No. GL-25.
41. Canadian-Montana Pipe Line Company	AO-7-GL-25	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.

APPENDIX III – Continued

New Licences and Orders to Export Natural Gas, Propane, and Ethane Issued during 1975

Applicant	Order Number	Date of Issue	Comments
42. Canadian-Montana Pipe Line Company	AO-8-GL-25	27/ 8/75	(i) Amendment changing the pricing formula condition of amended Licence No. AO-7-GL-25 to correct for certain word omission due to clerical error.
43. Canadian-Montana Pipe Line Company	AO-9-GL-25	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
44. ICG Transmission Limited	AO-5-GL-28	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
45. ICG Transmission Limited	AO-6-GL-28	27/ 8/75	(i) Amendment changing the pricing formula condition of amended Licence No. AO-5-GL-28 to correct for certain word omission due to clerical error.
46. ICG Transmission Limited	AO-7-GL-28	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
47. ICG Transmission Limited	AO-5-GL-29	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
48. ICG Transmission Limited	AO-6-GL-29	27/ 8/75	(i) Amendment changing the pricing formula condition of amended Licence No. AO-5-GL-29 to correct for certain word omission due to clerical error.
49. ICG Transmission Limited	AO-7-GL-29	21/10/75	(i) Amendment changing the pricing formula condition of amended Licence No. AO-6-GL-29.
50. ICG Transmission Limited	AO-8-GL-29	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
51. Alberta & Southern Gas Company Limited	AO-2-GL-35	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
52. Alberta & Southern Gas Company Limited	AO-3-GL-35	27/ 8/75	(i) Amendment changing the pricing formula condition of amended Licence No. AO-2-GL-35 to correct for certain word omission due to clerical error.

APPENDIX III – Continued

New Licences and Orders to Export Natural Gas, Propane, and Ethane Issued during 1975

Applicant	Order Number	Date of Issue	Comments
53. Alberta & Southern Gas Company Limited	AO-4-GL-35	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
54. Canadian-Montana Pipe Line Company	AO-2-GL-36	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
55. Canadian-Montana Pipe Line Company	AO-3-GL-36	27/ 8/75	(i) Amendment changing the condition specifying prices to be received by the Licensee in amended Licence No. AO-2-GL-36 to correct for certain word omission due to clerical error.
56. Canadian-Montana Pipe Line Company	AO-4-GL-36	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
57. TransCanada PipeLines Limited	AO-4-GL-37	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
58. TransCanada PipeLines Limited	AO-5-GL-37	29/ 7/75	(i) Amendment changing the pricing formula condition of amended Licence No. AO-4-GL-37 to correct for certain word omission due to clerical error.
59. TransCanada PipeLines Limited	AO-6-GL-37	27/ 7/75	(i) Amendment changing the condition specifying prices to be received by the Licensee in amended Licence No. AO-4-GL-37 to correct for certain word omission due to clerical error.
60. TransCanada PipeLines Limited	AO-7-GL-37	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
61. TransCanada PipeLines Limited	AO-3-GL-38	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after as specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
62. TransCanada PipeLines Limited	AO-4-GL-38	27/ 8/75	(i) Amendment changing the condition specifying prices to be received by the Licensee in amended Licence No. AO-3-GL-38 to correct for certain word omission due to clerical error.
63. TransCanada PipeLines Limited	AO-5-GL-38	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.

APPENDIX III – Continued

New Licences and Orders to Export Natural Gas, Propane, and Ethane Issued during 1975

Applicant	Order Number	Date of Issue	Comments
64. TransCanada PipeLines Limited	AO-3-GL-39	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.
65. TransCanada PipeLines Limited	AO-4-GL-39	27/ 8/75	(i) Amendment changing the condition specifying prices to be received by the Licensee in amended Licence No. AO-3-GL-39 to correct for certain word omission due to clerical error.
66. TransCanada PipeLines Limited	AO-5-GL-39	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
67. Westcoast Transmission Company Limited	AO-4-GL-41	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay the British Columbia Petroleum Corporation excepting "Pan Alberta Gas", in respect of producers selling gas to it, and to all other producers from whom gas is purchased directly according to a specified formula.
68. Westcoast Transmission Company Limited	AO-5-GL-41	29/ 6/75	(i) Amendment changing the pricing formula condition of amended Licence No. AO-4-GL-41 to correct for certain word omission due to clerical error.
69. Westcoast Transmission Company Limited	AO-6-GL-41	27/ 8/75	(i) Amendment changing the condition specifying prices to be received by the Licensee in amended Licence No. AO-4-GL-41 to correct for certain word omission due to clerical error.
70. Westcoast Transmission Company Limited	AO-7-GL-41	27/ 8/75	(i) Amendment changing the payment formula of Order No. AO-5-GL-41.
71. Westcoast Transmission Company Limited	AO-8-GL-41	28/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
72. Westcoast Transmission Company Limited	AO-9-GL-41	11/12/75	(i) Amendment varying, Licence GL-41 to extend the period during which gas may be delivered at Kingsgate, B.C. to October 31, 1976.
73. TransCanada PipeLines Limited	AO-1-GL-42	16/ 1/75	(i) Amendment varying Licence GL-42 to provide for the exchange of additional volumes of gas between the Licensee, Great Lakes Gas Transmission Company and Michigan Wisconsin Pipeline Company.
74. TransCanada PipeLines Limited	AO-3-GL-43	20/ 5/75	(i) Amendment requiring that prices to be received by the Licensee after a specified date shall not be less than those specified. (ii) Amendment requiring the Licensee to pay all the producers from whom gas is purchased according to a specified formula.

APPENDIX III – Concluded

New Licences and Orders to Export Natural Gas, Propane, and Ethane Issued during 1975

Applicant	Order Number	Date of Issue	Comments
75. TransCanada PipeLines Limited	AO-4-GL-43	29/ 7/75	(i) Amendment changing the pricing formula condition of amended Licence No. AO-3-GL-43 to correct for certain word omission due to clerical error.
76. TransCanada PipeLines Limited	AO-5-GL-43	27/ 8/75	(i) Amendment changing the condition specifying prices to be received by the Licensee in amended Licence No. AO-3-GL-43 to correct for certain word omission due to clerical error.
77. TransCanada PipeLines Limited	AO-6-GL-43	25/10/75	(i) Amendment revoking the condition whereby the Licensee is required to pay all the producers according to a specified formula with the implementation of Part III of the Petroleum Administration Act effective November 1, 1975.
<i>E. Orders Amending Propane Export Licences – Section 17</i>			
None Issued			
<i>F. Orders Amending Ethane Export Licences – Section 17</i>			
None Issued			
<i>G. Orders – Natural Gas Export – Part VI Regulations – Section 18</i>			
None Issued			
<i>H. Amending Orders – Natural Gas Export – Part VI Regulations – Section 18</i>			
None Issued			
<i>I. Orders – Propane Export – Part VI Regulations – Section 16A</i>			
None Issued			
<i>J. Orders – Natural Gas Export – Part VI Regulations – Section 6B</i>			
1. Western Decalta Petroleum Ltd.	MO-49-75	Coutts, Alta.	13/ 9/75 30/ 6/82 N/S 5 N/S

APPENDIX IV

Subsisting Licences to Export Natural Gas, Propane, and Butane as at 31 December 1975

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Export Volumes			
			From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)	
A. Natural Gas								
1. TransCanada PipeLines Limited	GL-1 (AO-7)	Emerson, Man.	11/ 4/60	14/ 5/81	223,000	74,000	1,410,000	
2. Alberta & Southern Gas Co. Ltd.	GL-3 (AO-7)	Kingsgate, B.C.	31/10/61	31/10/86	458,750	153,270	3,826,000	
3. Westcoast Transmission Company Limited	GL-4 (AO-8)	Kingsgate, B.C.	10/12/61	10/12/81	152,000	51,000	1,020,000	
4. Canadian-Montana Pipe Line Company	GL-5 (AO-7)	Cardston, Alta.	31/10/61	31/10/86	36,000	10,950	273,750	
5. Niagara Gas Transmission Limited	GL-6 (AO-13)	Cornwall, Ont.	7/ 9/62	30/ 6/87	23,000 ^(a)	5,520 ^(a)	121,190	
6. Alberta & Southern Gas Co. Ltd.	GL-16 (AO-5)	Kingsgate, B.C.	1/11/66	31/10/67	113,125	37,415	1,614,000	
			1/11/67	31/10/89	226,250	74,830		
7. Canadian-Montana Pipe Line Company	GL-17 (AO-5)	Cardston, Alta.	1/11/66	31/10/67	12,000	3,650	164,250	
			1/11/67	31/10/89	24,000	7,300		
8. TransCanada PipeLines Limited	GL-18 (AO-9)	Emerson, Man.	22/11/65	31/10/68	25,000	8,000 ^(b)	1,200,000	
			1/11/66	31/10/89	143,000	52,300		
9. TransCanada PipeLines Limited	GL-19 (AO-8)	Philipsburg, Que.	1/11/65	31/10/89	20,700 ⁽¹⁾	6,500	108,000	
10. TransCanada PipeLines Limited	GL-20 (AO-13)	Emerson, Man.	21/11/68	31/10/91	87,600	32,100	765,000	
11. TransCanada PipeLines Limited	GL-21 (AO-5) ^(c)	Emerson, Man.	5/11/68	31/10/91	N/S	247,782	6,000,000	
12. Alberta & Southern Gas Co. Ltd.	GL-24 (AO-7)	Kingsgate, B.C.	1/11/68	31/10/69	121,000	38,900	1,841,900	
			1/11/69	31/10/91	236,000	77,900		
			1/11/91	31/10/93	135,400	44,600		
			1/11/68	31/10/69	12,000	3,650		172,650
			1/11/69	31/10/91	24,000	7,300		
13. Canadian-Montana Pipe Line Company	GL-25 (AO-9)	Cardston, Alta.	1/11/91	31/10/93	13,800	4,200	172,650	
			27/ 3/73 ^(d)	14/ 5/74	99,460	19,892		
			14/ 5/74 ^(e)	14/ 5/75	99,460	19,892		
			14/ 5/75	14/ 5/76	99,460	10,000		
			1/11/70	31/10/95	2,834	337		8,084
15. ICG Transmission Limited	GL-29 (AO-8)	Fort Frances, Ont.	1/11/70	31/10/95	32,323	7,715	192,820	
16. ICG Transmission Limited	GL-30 (AO-2) ^(f)	Sprague, Man.	1/11/70	31/10/95	46,662	12,144	99,990	
			9/ 1/73	31/12/73	10,296	N/S	305	
17. Alberta & Southern Gas Co. Ltd.	GL-35 (AO-4)	Kingsgate, B.C.	1/11/70	31/10/85	205,000	67,500	1,012,500	
18. Canadian-Montana Pipe Line Co.	GL-36 (AO-4)	Cardston, Alta.	1/11/70	31/10/85	12,000	3,650	54,750	
19. TransCanada PipeLines Limited	GL-37 (AO-7)	Emerson, Man.	1/11/70	31/10/90	195,800	71,663	1,433,256	
20. TransCanada PipeLines Limited	GL-38 (AO-5)	Emerson, Man.	1/11/70	31/10/90	50,000	18,300	366,000	
21. TransCanada PipeLines Limited	GL-39 (AO-5)	Emerson, Man.	1/11/70	31/10/90	7,200	2,635	52,704	
22. Westcoast Transmission Company Limited	GL-41 (AO-9)	Huntingdon, B.C. ^(h)	1/11/71	31/10/72	733,338	254,982	5,042,860	
			1/11/72	31/10/89	809,200	281,359		
23. TransCanada PipeLines Limited	GL-42 (AO-1) ^(c)	Emerson, Man.	15/ 4/71	31/10/71	N/S	8,218	2,129,232	
			1/11/71	31/10/94	N/S	92,218		
24. TransCanada PipeLines Limited	GL-43 (AO-6)	Emerson, Man.	1/11/71	31/10/91	N/S	17,000	340,000	
25. Consolidated Natural Gas Limited	GL-44 ^(g)	Emerson, Man.	15/ 3/72	31/10/92	150,000	45,000	669,000	
26. Canadian Lowell Gas Limited	GL-48 ⁽ⁱ⁾	Niagara Falls, Ont.	10/ 4/75	31/ 3/88	12,500	1,500 ⁽ⁱ⁾	N/S	
27. Western Decalta Petroleum Limited	MO-49-75	Coutts, Alta.	13/ 9/75	30/ 6/82	(k)	5	N/S	

N/S Not specified.

(a) There was an exception for the period 23/12/70 to 31/12/71 when exports of 30,000 Mcf daily and 6,700 Mcf were authorized.

(b) Interruptible.

(c) This licence authorizes an export near Emerson, Man. for re-import near Sault Ste. Marie and Sarnia, Ont., to serve the Eastern Canadian market.

APPENDIX IV – Continued

Subsisting Licences to Export Natural Gas, Propane, and Ethane as at 31 December 1975

- (d) This export actually commenced on the day when the total quantity of gas authorized by Licence No. GL-8 was exported (approximately June 1973).
- (e) This amendment stipulated a maximum daily quantity of 27,000 Mcf or 450,000 Mcf in any calendar month during the period between May 14, 1974, and the commencement of export authorized for the period May 14, 1974, to May 14, 1975.
- (f) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ont.
- (g) This licence authorizes an export near Emerson, Manitoba. The quantity of gas exported under the authority of this licence shall be equal to the quantities of gas which the Licensee imports pursuant to Licence GLI-5.
- (h) Notwithstanding the Huntingdon, B.C. export point, the Licensee may export gas at a place near Kingsgate, B.C. during the period from Nov. 1, 1973, to Oct. 31, 1976.
- (i) This licence authorizes the exportation of the same quantities of gas which were imported for the purpose of its storage under the authority of Licence GLI-6.
- (j) This quantity in any one year is to be exported during the consecutive five-month period commencing on the 1st day of November in any one year and ending on the 31st day of March in the next following year.
- (k) The quantity of gas that may be exported in any one month shall not be more than 1,000,000 cubic feet.
- (l) The Licensee shall not export more than 17,700 Mcf in any one day until all Canadian requirements for contracted gas deliveries, including peak load requirements, are met.

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes	
			From	To	Column A (Annual Barrels)	Column B (Annual Barrels)
<i>B. Propane</i>						
1. Dome Petroleum Limited	GL-31 (AO-4) ^(a)	Gretna, Man.,	5/ 6/73 ^(b)	31/12/73	6,287,500	5,827,500
		Elmore, Sask.,	1/ 1/74	31/12/74	5,991,500	5,481,500
		Sarnia, Ont. and	1/ 1/75	31/12/75	5,913,000	5,338,000
		Windsor, Ont.	1/ 1/76	31/12/76	5,751,500	5,121,500
			1/ 1/77	31/12/77	5,582,500	4,887,500
			1/ 1/78	31/12/78	5,457,000	839,500
			1/ 1/79	31/12/79	5,357,000	839,500
			1/ 1/80	31/12/80	5,263,000	839,500
			1/ 1/81	31/12/81	5,114,000	839,500
			1/ 1/82	31/12/82	4,948,500	839,500
			1/ 1/83	31/12/83	4,665,500	839,500
			1/ 1/84	31/12/84	4,316,500	839,500
			1/ 1/85	31/12/85	3,898,000	839,500
			1/ 1/86	31/12/86	3,362,000	839,500
			1/ 1/87	31/12/87	2,930,500	906,000
			1/ 1/88	31/12/88	2,489,000	1,216,000
			1/ 1/89	31/12/89	2,078,000	1,241,000
			1/ 1/90	31/12/90	1,690,000	1,065,000
			1/ 1/91	31/12/91	1,396,000	1,045,000
			1/ 1/92	31/12/92	1,339,500	1,040,000
			1/ 1/93	31/12/93	1,233,500	1,025,000
			1/ 1/94	31/12/94	1,011,000	655,000
			1/ 1/95	31/12/95	294,000	0

APPENDIX IV – Continued

Subsisting Licences to Export Natural Gas, Propane, and Ethane as at 31 December 1975

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes	
			From	To	Column A (Annual Barrels)	Column B (Annual Barrels)
2. Amoco Canada Petroleum Company Ltd.	GL-32 (AO-2) ^(c)	Gretna, Man., Sarnia, Ont. and Windsor, Ont.	5/ 6/73 ^(d)	31/12/73	3,872,500	3,589,500
			1/ 1/74	31/12/74	3,579,000	3,274,000
			1/ 1/75	31/12/75	3,533,000	3,189,000
			1/ 1/76	31/12/76	3,421,500	3,046,500
			1/ 1/77	31/12/77	3,287,000	2,878,000
			1/ 1/78	31/12/78	3,197,500	584,000
			1/ 1/79	31/12/79	3,133,500	584,000
			1/ 1/80	31/12/80	3,077,000	584,000
			1/ 1/81	31/12/81	2,987,500	584,000
			1/ 1/82	31/12/82	2,943,500	584,000
			1/ 1/83	31/12/83	2,832,500	584,000
			1/ 1/84	31/12/84	2,610,000	584,000
			1/ 1/85	31/12/85	2,401,500	584,000
			1/ 1/86	31/12/86	2,182,500	584,000
			1/ 1/87	31/12/87	2,024,000	584,000
			1/ 1/88	31/12/88	1,838,000	584,000
			1/ 1/89	31/12/89	1,690,000	584,000
			1/ 1/90	31/12/90	1,546,000	584,000
			1/ 1/91	31/12/91	1,396,000	584,000
			1/ 1/92	31/12/92	1,339,500	584,000
			1/ 1/93	31/12/93	1,233,500	584,000
			1/ 1/94	31/12/94	1,011,000	486,400
			1/ 1/95	31/12/95	294,000	0
3. PanCanadian Gas Products Ltd.	GL-34 (AO-3) ^(e)	Gretna, Man., Sarnia or Windsor Ont.	5/ 6/73	31/12/73	2,415,000	2,238,000
			1/ 1/74	31/12/74	2,412,500	2,207,500
			1/ 1/75	31/12/75	2,380,000	2,149,000
			1/ 1/76	31/12/76	2,330,000	2,075,000
			1/ 1/77	31/12/77	2,295,500	2,009,500
			1/ 1/78	31/12/78	2,259,500	401,500
			1/ 1/79	31/12/79	2,223,500	401,500
			1/ 1/80	31/12/80	2,186,000	401,500
			1/ 1/81	31/12/81	2,126,500	401,500
			1/ 1/82	31/12/82	2,005,000	401,500
			1/ 1/83	31/12/83	1,833,000	401,500
			1/ 1/84	31/12/84	1,706,500	401,500
			1/ 1/85	31/12/85	1,496,500	401,500
			1/ 1/86	31/12/86	1,179,500	335,000
			1/ 1/87	31/12/87	906,500	25,000
			1/ 1/88	31/12/88	651,000	0
			1/ 1/89	31/12/89	388,000	0
			1/ 1/90	31/12/90	144,000	0

APPENDIX IV — Continued

Subsisting Licences to Export Natural Gas, Propane, and Ethane as at 31 December 1975

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes	
			From	To	Column A (Annual Barrels)	Column B (Annual Barrels)
4. Dome Petroleum Limited	GL-46 (AO-2) ^(g)	Windsor, Ont. Sarnia, Ont.	1/ 4/74	31/ 3/75	1,930,000	
			1/ 4/75	31/ 3/76	2,560,000	
			1/ 4/76	31/ 3/77	2,990,000	
			1/ 4/77	31/ 3/78	3,930,000	
			1/ 4/78	31/ 3/79	3,900,000	
			1/ 4/79	31/ 3/80	3,790,000	
			1/ 4/80	31/ 3/81	3,450,000	
			1/ 4/81	31/ 3/82	2,950,000	
			1/ 4/82	31/ 3/83	2,400,000	
			1/ 4/83	31/ 3/84	2,100,000	

- (a) This licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-26 with Licence No. GL-31 whereby certain quantities of the propane exported near Gretna, Manitoba and Elmore, Saskatchewan is imported into and exported from Canada near Sarnia and Windsor, Ontario. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import that volume of propane authorized for export during that period as provided by the licence. The Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.
- (b) This period includes the volumes of propane exported and imported pursuant to Licences GL-26 and GL-31 during the part of 1973 prior to the day of issue of this order.
- (c) This Licence authorized additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-27 with Licence No. GL-32. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.
- (d) This period includes the volumes of propane exported and imported pursuant to Licences GL-27 and GL-32 during the part of 1973 prior to the day of the issue of this order.
- (e) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.
- (f) This period includes the volumes of propane exported and imported pursuant to Licences GL-33 and GL-34 during the part of 1973 prior to the day of the issue of this order.
- (g) This is an import-export licence whereby no propane may be exported at Windsor, Ontario, that has not been imported at Sarnia, Ontario. Notwithstanding the above export or import points, the Licensee may export propane at Sarnia, Ontario, and import propane at Windsor, Ontario, during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.

APPENDIX IV – Concluded

Subsisting Licences to Export Natural Gas, Propane, and Ethane as at 31 December 1975

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes (Barrels)
			From	To	
C. Ethane					
1. Dome Petroleum Limited	GL-45 (AO-2) ^(a)	Windsor, Ontario	1/ 4/74	31/ 3/75	1,830,000
			1/ 4/75	31/ 3/76	1,830,000
			1/ 4/76	31/ 3/77	1,830,000
			1/ 4/77	31/ 3/78	1,940,000
			1/ 4/78	31/ 3/79	1,970,000
			1/ 4/79	31/ 3/80	2,010,000
			1/ 4/80	31/ 3/81	2,080,000
			1/ 4/81	31/ 3/82	2,190,000
			1/ 4/82	31/ 3/83	2,230,000
			1/ 4/83	31/ 3/84	2,090,000
2. Dome Petroleum Limited	GL-47 (AO-1)	Elmore, Sask.	1/11/76 ^(b)	31/12/76	(b)
			1/ 1/77	31/12/77	14,000,000
			1/ 1/78	31/12/78	13,900,000
			1/ 1/79	31/12/79	13,000,000
			1/ 1/80	31/12/80	9,900,000
			1/ 1/81	31/12/81	8,900,000
			1/ 1/82	31/12/82	7,500,000
			1/ 1/83	31/12/83	2,900,000

(a) This licence authorizes an export near Windsor, Ontario. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Sarnia, Ontario. Notwithstanding the above export and import points, the licensee may export ethane at Sarnia, Ontario, and import ethane at Windsor, Ontario during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.

(b) This licence provides for two commencement dates, namely, the first delivery of ethane into Cochin Pipelines Ltd. or November 1, 1976, whichever is earlier. The quantity of ethane that may be exported in the period in 1976 ending on December 31, 1976, shall not exceed that quantity which is the same percentage of 14,100,000 barrels, that the number of days between the date of commencement of the licence term and December 31, 1976 is to 365 days.

APPENDIX V

Exports of Natural Gas

Exporter and Licence/Order	Maximum			(MMcf)					Cumulative to 31/12/70	Cumulative to 31/12/75	Total Authorized Exports	Remaining (a) Under Licences
	Daily (Mcf)	Annual (MMcf)		1971	1972	1973	1974	1975				
1. TransCanada PipeLines Limited GL-1 (AO-7)	223,000	74,000		74,057	73,904	73,687	74,390	73,487	1,081,632	1,410,000	328,368	
2. TransCanada PipeLines Limited GL-2 (AO-7)	96,900 (b)	20,663 (b)		19,170	3,672	—	—	—	62,414	N/S	N/A	
3. Alberta & Southern Gas Co. Ltd. GL-3 (AO-7) (c)	458,750	153,270		167,484	167,436	157,353	138,837	151,464	2,149,991	3,826,000	1,676,009	
4. Westcoast Transmission Company Limited GL-4 (AO-8)	152,000	51,000		51,215	50,945	50,145	46,196	48,324	648,598	1,020,000	371,402	
5. Canadian-Montana Pipe Line Company GL-5 (AO-7) (c)	36,000	10,950		10,792	12,068	11,525	11,032	10,777	155,011	273,750	118,739	
6. Niagara Gas Transmission Limited GL-6 (AO-12)	23,000 (d)	5,520 (d)		5,946	5,899	5,547	5,556	5,497	58,226	121,190	62,964	
7. Patrick T. Buckley GL-7 (AO-1)	(e)	10		—	—	—	—	—	22	N/S	N/A	
8. Canadian-Montana Pipe Line Company GL-8 (AO-1)	99,460	19,892		16,021	16,391	7,833	—	—	220,000	220,000	N/A	
9. Alberta & Southern Gas Co. Ltd. GL-16 (AO-5) (c)	113,125 226,250	37,415 74,830		65,517	74,459	77,730	74,162	76,984	622,833	1,614,000	991,167	
10. Canadian-Montana Pipe Line Company GL-17 (AO-5) (c)	12,000 24,000	3,650 7,300		7,195	8,054	7,674	7,355	7,185	63,005	164,250	101,245	
11. TransCanada PipeLines Limited GL-18 (AO-9)	25,000 143,000	8,000 52,300		42,854	42,578	42,615	42,779	42,182	359,760	1,200,000	840,240	
12. TransCanada PipeLines Limited GL-19 (AO-8)	17,700	6,500		2,820	3,745	3,912	4,891	4,124	26,454	108,000	81,546	
13. TransCanada PipeLines Limited GL-20 (AO-13)	87,600	32,100		30,492	31,768	31,974	31,974	31,974	216,140	765,000	548,860	
14. TransCanada PipeLines Limited GL-21 (AO-5) (g)	N/S	247,782		222,465	221,055	227,878	214,189	210,268	1,505,602	6,000,000	4,494,398	
15. TransCanada PipeLines Limited GL-22 (AO-4)	N/S	N/S		—	—	—	—	—	2,592	3,000	N/A	
16. Westcoast Transmission Company Limited PC1955-958 (AO-2) (h)	N/S 303,450	N/S N/S		85,892	—	—	—	—	1,356,151	N/A	N/A	

APPENDIX V – Continued
Exports of Natural Gas

Exporter and Licence/Order	Maximum		(MMcf)							Cumulative to 31/12/70	Cumulative to 31/12/75	Total Authorized Exports	Remaining(a) Under Licences
	Daily (Mcf)	Annual (MMcf)	1971	1972	1973	1974	1975						
17. Westcoast Transmission Company Limited GL-23 (AO-7)(h)													
01/11/66 – 31/10/67	101,150	36,920	} 199,851	–	–	–	–	–	{ 257,112	N/A	N/A		
01/11/67 – 31/02/68	101,150	24,579											
22/02/68 – 31/10/88	202,300	74,040											
18. Alberta & Southern Gas Co. Ltd. GL-24 (AO-7)(c)													
01/11/68 – 31/10/69	121,000	38,900	} 103,263	70,075	83,474	83,075	84,889	{ 484,778	1,841,900	1,357,122			
01/11/69 – 31/10/91	236,000	77,900											
01/11/91 – 31/10/93	135,400	44,600											
19. Canadian-Montana Pipe Line Company GL-25 (AO-9)(c)													
01/11/68 – 31/10/69	12,000	3,650	} 10,856	8,054	19,190	25,047	20,626	{ 91,968	172,650	80,682			
01/11/69 – 31/10/91	24,000	7,300											
01/11/91 – 31/10/93	13,800	4,200											
26/06/73 – 14/05/75	99,460	19,892											
14/05/75 – 14/05/76	99,460	10,000											
20. ICG Transmission Limited GL-28 (AO-7)	2,834	337	10	5	135	248	325	390	1,113	8,084	6,971		
21. ICG Transmission Limited GL-29 (AO-8)(c)	32,323	7,715	–	7,109	8,027	7,650	7,448	6,816	37,050	192,820	155,770		
22. ICG Transmission Limited GL-30 (AO-2)(i)	46,662	12,144	45	9,100	11,500	10,286	11,114	9,654	51,699	299,990	248,291		
23. Alberta & Southern Gas Co. Ltd. GL-35 (AO-4)	205,000	67,500	10,155	61,000	71,920	68,804	61,652	66,896	340,427	1,012,500	672,073		
24. Canadian-Montana Pipe Line Company GL-36 (AO-4)	12,000	3,650	241	3,445	4,023	3,842	3,677	3,592	18,820	54,750	35,930		
25. TransCanada PipeLines Limited GL-37 (AO-7)	195,800	71,663	11,944	68,155	72,143	71,467	71,467	71,467	366,643	1,433,256	1,066,613		
26. TransCanada PipeLines Limited GL-38 (AO-5)	50,000	18,300	2,332	18,250	18,300	18,250	18,250	18,250	93,632	366,000	272,368		
27. TransCanada PipeLines Limited GL-39 (AO-5)	7,200	2,635	439	2,572	2,635	2,630	2,628	2,628	13,532	52,704	39,172		
28. Westcoast Transmission Company Limited GL-40 (AO-1)(h)	75,863	27,770	–	2,560	–	–	–	–	2,560	N/A	N/A		
29. Westcoast Transmission Company Limited GL-41 (AO-9)(h)													
01/11/71 – 31/10/72	733,338	254,982	} –	43,421	255,496	267,753	240,462	214,119	{ 1,021,251	5,042,860	4,021,609		
01/11/72 – 31/10/89	809,200	281,359											

APPENDIX V – Continued

Exports of Natural Gas

Exporter and Licence/Order	Maximum		(MMcft)										Total Authorized Exports	Remaining (a) Under Licences
	Daily (Mcf)	Annual (MMcft)	Cumulative to 31/12/70	1971	1972	1973	1974	1975	Cumulative to 31/12/75					
30. TransCanada PipeLines Limited GL-42 (AO-1)(g) 15/04/71 – 31/10/71 01/11/71 – 31/10/94	N/S N/S	8,218 92,218	—	17,697	82,271	84,811	79,716	78,256	{ 342,751		2,129,232	1,786,481		
31. TransCanada PipeLines Limited GL-43 (AO-6)	N/S	17,000	—	347	7,536	13,914	6,838	5,120	{ 33,755		340,000	306,157		
32. Consolidated Natural Gas Limited GL-44(f)	150,000	45,000	—	—	2,669	28,336	19,503	15,725	{ 66,233		669,000	602,767		
33. Patrick T. Buckley GO-1-68	1,000	5	22	—	—	—	—	—	{ 22		N/S	N/A		
34. Union Gas Company of Canada Limited EO-2-63	N/S	N/S	55	—	—	—	—	—	{ 55		200	N/A		
35. TransCanada PipeLines Limited EO-1-70	N/S	N/S	25	—	—	—	—	—	{ 25		40	N/A		
36. TransCanada PipeLines Limited EO-6-70	N/S	N/S	124	—	—	—	—	—	{ 124		125	N/A		
37. TransCanada PipeLines Limited EO-2-72	N/S	N/A	—	—	120	—	—	—	{ 120		N/S	N/A		
38. TransCanada PipeLines Limited EO-5-72	40,000	N/S	—	—	21	—	—	—	{ 21		40	N/A		
39. Gaz Métropolitain, inc. EO-2-70 (AO-1)	N/A	N/A	151	—	—	—	—	—	{ 151		N/A	N/A		
40. Gaz Métropolitain, inc. EO-3-70 (AO-1)	N/A	N/A	108	—	—	—	—	—	{ 108		N/A	N/A		
41. Gaz Métropolitain, inc. EO-5-70 (AO-1)	N/A	N/A	374	240	—	—	—	—	{ 614		N/A	N/A		
42. Gaz Métropolitain, inc. EO-8-70	N/A	N/A	57	93	—	—	—	—	{ 150		N/A	N/A		
43. Gaz Métropolitain, inc. EO-2-71	N/A	N/A	—	491	—	—	—	—	{ 491		N/A	N/A		
44. Gaz Métropolitain, inc. EO-3-71	N/A	N/A	—	537	—	—	—	—	{ 537		N/A	N/A		
45. Gaz Métropolitain, inc. EO-4-71	N/A	N/A	—	84	—	—	—	—	{ 84		N/A	N/A		
46. Gaz Métropolitain, inc. EO-7-72	N/A	N/A	—	—	247	—	—	—	{ 247		N/A	N/A		
47. Gaz Métropolitain, inc. EO-1-73	N/A	N/A	—	—	—	9	—	—	{ 9		N/A	N/A		

APPENDIX V – Concluded

Exports of Natural Gas

Exporter and Licence/Order	Maximum		(MMcf)								Total Authorized Exports	Remaining(a) Under Licences
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/70	1971	1972	1973	1974	1975	Cumulative to 31/12/75			
48. Gaz Métropolitain, inc. GO-2-73	N/A	N/A	—	—	—	708	—	—	708	(i)	N/A	
49. TransCanada PipeLines Limited EO-1-74(k)	150	N/A	—	—	—	—	79	—	79	N/A	N/A	
50. TransCanada PipeLines Limited EO-2-74(k)	N/S	N/A	—	—	—	—	67	—	67	N/A	N/A	
51. TransCanada PipeLines Limited EO-1-75(i)	N/A	N/A	—	—	—	—	—	210	210	480	N/A	
52. TransCanada PipeLines Limited EO-2-75(i)	N/A	N/A	—	—	—	—	—	2	2	40	N/A	
Gross Exports			5,343,089	1,161,484	1,327,146	1,379,245	1,283,709	1,260,906	11,755,579			
Deduct Re-Export of Imports:			—	—	2,669	28,336	19,503	15,725	66,233			
Item 32, GL-44(k)			—	—	—	—	—	210	210			
Item 51, EO-1-75(n)			—	—	—	—	—	—	2			
Item 52, EO-2-75(n)			—	—	—	—	—	—	2			
Deduct Exports for Re-Import:			409,747	222,465	221,055	227,878	214,189	210,268	1,505,602			
Item 14, GL-21(i)			45	9,100	11,500	10,286	11,114	9,654	51,699			
Item 22, GL-30(k)			—	17,697	82,271	84,811	79,716	78,256	342,751			
Item 30, GL-42(i)			—	—	—	—	—	—	—			
Net Exports			4,933,297	912,222	1,009,651	1,027,934	959,187	946,791	9,789,082			

(a) It may not be possible to export total volumes remaining under licences due to restrictions on peak day and annual volumes.

(b) This licence authorizes an export of 30,000 MMcf in the period 01/11/70 to 31/03/72 and an additional export of 15,000 MMcf on an interruptible basis in the year commencing 1 November 1970.

(c) Volumes exceed licenced annual amounts due to make-up of accumulated shortfalls from previous years as authorized by licence.

(d) This licence authorizes daily and annual exports of 30,000 Mcf and 6,700 MMcf respectively during the period 23/12/70 to 31/12/71.

(e) 1,300 Mcf per month.

(f) Interruptible.

(g) This licence authorizes an export at Emerson, Manitoba for re-import at Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.

(h) On the day that first delivery of gas was made under licence GL-41, licences PC1955-958, GL-23 and GL-40 were revoked.

(i) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(j) This licence authorizes the export at Emerson, Manitoba of those volumes imported into Canada pursuant to licence GL-1-5.

(k) This licence authorizes an export of 9,167,000 U.S. gallons.

(l) These licences authorize re-export of imports at Niagara Falls, Ontario on an emergency basis.

N/S Not specified.

N/A Not applicable.

— Amount too small to be expressed.

APPENDIX VI

New Licences and Orders to Import Natural Gas, Propane, and Ethane Issued During 1975

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum		
			From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)

A. Licences – Natural Gas Import – Section 82

1. Canadian Lowell Gas Limited	GLI-6	Niagara Falls, Ont.	10/ 4/75	31/10/87	12,500	1,500 ^(a)	N/S
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(a) This quantity is to be imported during the consecutive seven-month period, commencing on the 1st day of April and ending on the 31st day of October in any year.

B. Licences – Propane Import – Section 82

None Issued

C. Licences – Ethane Import – Section 82

None Issued

D. Orders Amending Existing Natural Gas Import Licences – Section 17

Applicant	Order Number	Date of Issue	Comments
1. TransCanada PipeLines Limited	AO-1-GL-42	16/ 1/75	(i) Amendment providing for the exchange of additional volumes of gas between the licensee, Great Lakes Gas Transmission Company, and Michigan Wisconsin Pipeline Company.

E. Orders Amending Existing Propane Import Licences – Section 17

None Issued

F. Orders – Natural Gas Import – Part VI Regulations – Section 17

Applicant	Order Number	Date of Issue	Point of Export	Term		Import Volumes
				From	To	
1. TransCanada PipeLines Limited	EO-1-75 ^(a)	26/ 8/75	Niagara Falls, Ont.	27/ 8/75	15/ 9/75	120,000 Mcf/day
2. TransCanada PipeLines Limited	EO-2-75 ^(a)	3/11/75	Niagara Falls, Ont.	1/11/75	30/11/75	4,000 Mcf/day

G. Orders Amending Existing Natural Gas Import Orders – Section 17

None Issued

(a) The licensee shall return the quantity of gas imported pursuant to this Order by exporting such gas to Tennessee Gas Pipeline Co. during the 30 day period commencing the date of the last day of importing such gas.

APPENDIX VII

Subsisting Licences and Orders to Import Natural Gas, Propane, and Ethane as at 31 December 1975

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Import Volumes		
			From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)
A. Natural Gas							
1. Union Gas Company of Canada Limited	GLI-1	Ojibway, Ont.	1/ 2/65	5/11/76	55,000	15,500	170,000
2. Border Utilities Limited	GO-2-66(AO-1)	Coutts, Alta.	2/ 6/66	14/ 9/85	1,000	N/S	N/S
3. Canadian Western Natural Gas Company Limited	GO-6-66(AO-1)	Coutts, Alta.	22/ 9/66	14/ 9/85	1,000	N/S	N/S
4. TransCanada PipeLines Limited	GL-21(AO-5) ^(a)	(Sault Ste. Marie, and Sarnia, Ont.)	5/11/68	31/10/91	N/S	247,782	6,000,000
5. ICG Transmission Limited	GL-30(AO-2) ^(b)	Rainy River, Ont.	1/11/70	31/10/95	46,662	12,144	299,990
6. TransCanada PipeLines Limited	GL-42(AO-1) ^(a)	(Sault Ste. Marie, and Sarnia, Ont.	15/ 4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	2,129,232
7. Consolidated Natural Gas Limited	GLI-5(AO-1)	N/S	15/ 3/72	31/10/92	150,000	45,000	
8. Canadian Lowell Gas Limited	GLI-6	Niagara Falls, Ont.	10/ 4/75	31/10/87	12,500	1,500 ^(c)	N/S

(a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(b) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(c) This quantity in any one year is to be imported during the consecutive seven-month period, commencing on the 1st day of April and ending on the 31st day of October in any year.

N/S Not specified.

APPENDIX VII — Continued

Subsisting Licences and Orders to Import Natural Gas, Propane, and Ethane as at 31 December 1975

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Annual Volumes	
			From	To	Column A (Barrels)	Column B (Barrels)
B. Propane						
1. Dome Petroleum Limited	GL-31(AO-4)(a)	Sarnia, Ontario	5/6/73(b)	31/12/73	6,287,500	5,827,500
			1/1/74	31/12/74	5,991,500	5,481,500
			1/1/75	31/12/75	5,913,000	5,338,000
			1/1/76	31/12/76	5,751,500	5,121,500
			1/1/77	31/12/77	5,582,500	4,887,500
			1/1/78	31/12/78	5,457,000	4,692,000
			1/1/79	31/13/79	5,357,000	4,517,000
			1/1/80	31/12/80	5,263,000	4,338,000
			1/1/81	31/12/81	5,114,000	4,134,000
			1/1/82	31/12/82	4,949,000	3,909,000
			1/1/83	31/12/83	4,665,500	839,000
			1/1/84	31/12/84	4,316,500	839,500
			1/1/85	31/12/85	3,898,000	839,500
			1/1/86	31/12/86	3,362,000	839,500
			1/1/87	31/12/87	2,930,500	906,000
			1/1/88	31/12/88	2,489,000	1,216,000
			1/1/89	31/12/89	2,078,000	1,241,000
			1/1/90	31/12/90	1,690,000	1,065,000
			1/1/91	31/12/91	1,396,000	1,045,000
			1/1/92	31/12/92	1,339,500	1,040,000
			1/1/93	31/12/93	1,233,500	1,025,000
			1/1/94	31/12/94	1,011,000	655,000
			1/1/95	31/12/95	294,000	0
2. Amoco Canada Petroleum Company Ltd.	GL-32(AO-2)(c)	Sarnia, Ont.	5/6/73(d)	31/12/73	3,872,500	3,589,500
			1/1/74	31/12/74	3,579,000	3,274,000
			1/1/75	31/12/75	3,533,000	3,189,000
			1/1/76	31/12/76	3,421,500	3,046,500
			1/1/77	31/12/77	3,287,000	2,878,000
			1/1/78	31/12/78	3,197,500	584,000
			1/1/79	31/12/79	3,133,500	584,000
			1/1/80	31/12/80	3,077,000	584,000
			1/1/81	31/12/81	2,987,500	584,000
			1/1/82	31/12/82	2,943,500	584,000
			1/1/83	31/12/83	2,832,500	584,000
			1/1/84	31/12/84	2,610,000	584,000
			1/1/85	31/12/85	2,401,500	584,000
			1/1/86	21/12/86	2,182,500	584,000
			1/1/87	31/12/87	2,024,000	584,000
			1/1/88	31/12/88	1,838,000	584,000
			1/1/89	31/12/89	1,690,000	584,000
			1/1/90	31/12/90	1,546,000	584,000
			1/1/91	31/12/91	1,396,000	584,000
			1/1/92	31/12/92	1,339,500	584,000
			1/1/93	31/12/93	1,233,500	584,000
			1/1/94	31/12/94	1,011,000	486,400
			1/1/95	31/12/95	294,000	0

APPENDIX VII – Continued

Subsisting Licences and Orders to Import Natural Gas, Propane, and Ethane as at 31 December 1975

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Annual Volumes	
			From	To	Column A (Barrels)	Column B (Barrels)
3. Pan Canadian Gas Products Ltd.	GL-34(AO-3)(e)	Sarnia, Ont.	5/6/73 ^(f)	31/12/73	2,415,000	2,238,000
			1/1/74	31/12/74	2,412,500	2,207,500
			1/1/75	31/12/75	2,380,000	2,149,000
			1/1/76	31/12/76	2,330,000	2,075,000
			1/1/77	31/12/77	2,295,500	2,009,500
			1/1/78	31/12/78	2,259,500	401,500
			1/1/79	31/12/79	2,223,500	401,500
			1/1/80	31/12/80	2,186,000	401,500
			1/1/81	31/12/81	2,126,500	401,500
			1/1/82	31/12/82	2,005,000	401,500
			1/1/83	31/12/83	1,833,000	401,500
			1/1/84	31/12/84	1,706,500	401,500
			1/1/85	31/12/85	1,496,500	401,500
			1/1/86	31/12/86	1,179,500	335,000
			1/1/87	31/12/87	906,500	25,000
			1/1/88	31/12/88	651,000	0
			1/1/89	31/12/89	388,000	0
			1/1/90	31/12/90	144,000	0
4. Dome Petroleum Limited	GL-46(AO-2)(g)	Sarnia, Ont.			Maximum Volume (Barrels)	
			1/4/74	31/3/75	1,930,000	
			1/4/75	31/3/76	2,560,000	
			1/4/76	31/3/77	2,990,000	
			1/4/77	31/3/78	3,930,000	
			1/4/78	31/3/79	3,900,000	
			1/4/79	31/3/80	3,790,000	
			1/4/80	31/3/81	3,450,000	
			1/4/81	31/3/82	2,950,000	
			1/4/82	31/3/83	2,400,000	
			1/4/83	31/3/84	2,100,000	

APPENDIX VII – Concluded

Subsisting Licences and Orders to Import Natural Gas, Propane, and Ethane as at 31 December 1975

- (a) This licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under licence No. GL-26 with Licence No. GL-31 whereby certain quantities of the propane exported near Gretna, Manitoba and Elmore, Saskatchewan is imported into and exported from Canada near Sarnia and Windsor, Ontario. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import that volume of such propane exported during that period as provided by the Licence. The Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.
- (b) This period includes the volumes of propane exported and imported pursuant to Licences GL-26 and GL-31 during the part of 1973 prior to the date of issue of this order.
- (c) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-27 with Licence No. GL-32. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.
- (d) This period includes the volumes of propane exported and imported pursuant to Licences GL-27 and GL-32 during the part of 1973 prior to the day of the issue of this order.
- (e) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.
- (f) This period includes the volumes of propane exported and imported pursuant to Licences GL-33 and GL-34 during the part of 1973 prior to the day of the issue of this order.
- (g) This is an import-export licence whereby no propane may be exported at Windsor, Ontario, that has not been imported at Sarnia, Ontario. Notwithstanding the above export and import points, the Licensee may export propane at Sarnia, Ontario, and import propane at Windsor, Ontario, during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Import Volume
			From	To	(Barrels)
C. Ethane					
1. Dome Petroleum Limited	GL-45(AO-2)(a)	Sarnia, Ontario	1/4/74	31/3/75	1,830,000
			1/4/75	31/3/76	1,830,000
			1/4/76	31/3/77	1,830,000
			1/4/77	31/3/78	1,940,000
			1/4/78	31/3/79	1,970,000
			1/4/79	31/3/80	2,010,000
			1/4/80	31/3/81	2,080,000
			1/4/81	31/3/82	2,190,000
			1/4/82	31/3/83	2,230,000
			1/4/83	31/3/84	2,090,000

- (a) This licence authorizes an import near Sarnia, Ontario. The quantity of ethane imported under the authority of this licence shall be equal to the quantities of ethane which the licensee exports near Windsor, Ontario. Notwithstanding the export and import points specified in Licence GL-45, the Licensee may export ethane at Sarnia, Ontario, and import ethane at Windsor, Ontario during a specified period terminating the day that leave to open the pipeline authorized under certificate is granted by the Board.

APPENDIX VIII

Imports of Natural Gas

Importer and Licence/Order	Maximum		(MMcf)							Total		Remaining(a) Under Licences
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/70	1971	1972	1973	1974	1975	Cumulative to 31/12/75	Imports		
1. Courtts Gas Company Limited PC1955-1742	N/S	120	797	—	—	—	—	—	797	2,340	N/A	
2. Border Utilities Ltd. GO-2-66 (AO-1)	1,000	N/S	162	36	39	33	30	35	335	N/S	N/A	
3. Canadian Western Natural Gas Company Limited GO-6-66 (AO-1)	1,000	N/S	357	77	87	55	1	31	608	N/S	N/A	
4. Union Gas Company of Canada Limited PC1956-1848	N/S	5,500	72,563	—	—	—	—	—	72,563	N/S	N/A	
5. Union Gas Company of Canada Limited GLI-1	55,000	15,500	68,075	14,236	15,426	14,736	13,231	10,153	135,857	167,042(b)	31,185	
6. TransCanada Pipelines Limited GLI-2 (AO-2)	N/S	25,500 30,400 15,300 10,200 5,100	77,166	—	—	—	—	—	77,166	86,500	N/A	
7. Tecumseh Gas Storage Limited GLI-3	20,000	3,000	5,896	—	—	—	—	—	5,896	5,896(b)	—	
8. TransCanada PipeLines Limited GLI-4 (AO-6)	N/S	N/S	79,029	—	—	—	—	—	79,029	82,303	N/A	
9. Consolidated Natural Gas Limited GLI-5 (AO-1)(e)	150,000	45,000	—	—	2,669	28,605	19,663	15,769	66,706	669,000	602,294	
10. TransCanada PipeLines Limited GL-21 (AO-5)(c)	N/S	247,782	408,694	223,189	220,480	228,608	214,391	209,337	1,504,699	6,000,000	4,495,301	
11. ICG Transmission Limited GL-30 (AO-2)(d)	46,662	12,144	45	9,100	11,500	10,286	11,114	9,654	51,699	299,990	248,291	
12. TransCanada PipeLines Limited GL-42(c)	N/S	8,218 92,218	—	17,911	82,057	85,082	79,791	77,910	342,751	2,129,232	1,786,481	
13. TransCanada PipeLines Limited EO-2-62	N/S	N/S	2	—	—	—	—	—	2	5	N/A	
14. TransCanada PipeLines Limited EO-1-63	70,000	N/S	199	—	—	—	—	—	199	1,000	N/A	
15. Union Gas Company of Canada Limited EO-2-63	N/S	N/S	55	—	—	—	—	—	55	55	—	
16. Union Gas Company of Canada Limited EO-3-63	N/S	N/S	1,083	—	—	—	—	—	1,083	1,965(b)	N/A	

APPENDIX VIII — Concluded

Imports of Natural Gas

Importer and Licence/Order	Maximum		(MMcf)							Total Authorized Imports	Remaining(a) Under Licences
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/70	1971	1972	1973	1974	1975	Cumulative to 31/12/75		
17. TransCanada PipeLines Limited EO-1-64	140,000	N/S	2,511	—	—	—	—	—	2,511	2,500	N/A
18. TransCanada PipeLines Limited EO-2-64 (AO-1)	150,000	N/S	1,756	—	—	—	—	—	1,756	3,450	N/A
19. Union Gas Company of Canada Limited EO-2-66 (AO-1)	N/S	N/S	7,861	—	—	—	—	—	7,861	7,861 (b)	—
20. Union Gas Company of Canada Limited EO-1-67	N/S	N/S	7,861	—	—	—	—	—	7,861	7,861 (b)	—
21. TransCanada PipeLines Limited EO-2-67	N/S	N/S	389	—	—	—	—	—	389	500	N/A
22. Westcoast Transmission Company Limited EO-4-70	N/A	N/A	1	—	—	—	—	—	1	N/A	—
23. TransCanada PipeLines Limited EO-1-72	100,000	N/A	—	—	121	—	—	—	121	N/S	N/A
24. TransCanada PipeLines Limited EO-4-72	40,000	N/A	—	—	20	—	—	—	20	40	N/A
25. TransCanada PipeLines Limited EO-1-74	150	N/A	—	—	—	—	79	—	79	N/S	N/A
26. TransCanada PipeLines Limited EO-2-74	N/S	N/A	—	—	—	—	66	—	66	N/S	N/A
27. TransCanada PipeLines Limited EO-1-75	120,000	N/A	—	—	—	—	—	208	208	480	N/A
28. TransCanada PipeLines Limited EO-2-75	4,000	N/A	—	—	—	—	—	3	3	40	N/A
Gross Imports			734,502	264,549	332,399	367,405	338,366	323,100	2,360,321		
Deduct Imports for Re-Exports:											
Item 9, GLI-5(e)			—	—	2,669	28,604	19,663	15,769	66,706		
Item 25, EO-1-74			—	—	—	—	79	—	79		
Item 26, EO-2-74			—	—	—	—	66	—	66		
Item 27, EO-1-75			—	—	—	—	—	208	208		
Item 28, EO-2-75			—	—	—	—	—	3	3		
Deduct Re-Imports of Exports:											
Item 10, GL-21(c)			408,694	223,189	220,480	228,608	214,391	209,337	1,504,699		
Item 11, GL-30(d)			45	9,100	11,500	10,286	11,114	9,654	51,699		
Item 12, GL-42(c)			—	17,911	82,057	85,082	79,791	77,910	342,751		
Net Imports			325,763	14,349	15,693	14,824	13,262	10,219	394,110		

(a) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.

(b) Converted from "wet base" to "dry base" for purpose of comparability.

(c) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(d) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(e) The quantities of gas authorized for import by this licence near Loomis, Saskatchewan, are authorized to be exported at Emerson, Manitoba, pursuant to Licence GL-44.

(f) This licence authorizes an import for re-export on an emergency basis near Niagara Falls, Ontario.

N/S Not specified

APPENDIX IX

Exports of Canadian Crude Oil and Equivalent to the United States 1974 and 1975 (Barrels of 34.9722 Standard Gallons)

		1974		1975	
		Total for Year	Daily Average	Total for Year	Daily Average
<i>Districts I – IV</i>					
Amoco Oil Company	Whiting, Indiana	14,412,410	39,486	8,130,767	22,276
Amoco Oil Company	Mandan, N. Dakota	2,355,843	6,454	3,290,116	9,014
Amoco Oil Company	Sugar Creek, Missouri	61,000	167	75,500	207
Amoco Oil Company	Casper, Wyoming	1,142,089	3,129	592,000	1,622
American Petrofina Inc.	Kansas City, Kansas	381,198	1,044	4,425	12
APCO Oil Corporation	Kansas City, Kansas	992,713	2,719	—	—
Ashland Oil & Refining Co.	N. Tonawanda, New York	17,085,631	46,810	13,230,651	36,248
Ashland Oil & Refining Co.	Canton, Ohio	1,203,068	3,296	65,766	180
Ashland Oil & Refining Co.	Findlay, Ohio	351,915	964	790,179	2,165
Ashland Oil & Refining Co.	St. Paul, Minnesota	18,536,457	50,785	16,048,052	43,967
Atlantic Richfield Oil Co.	East Chicago, Indiana	7,175,570	19,659	3,568,805	9,778
Bay Refining Company	Bay City, Michigan	4,468,157	12,243	567,966	1,556
Canadian Hydrocarbons Ltd.	Cut Bank & Kevin, Montana	1,164,166	3,189	938,209	2,570
Clark Oil & Refining Corp.	Blue Island, Illinois	12,264,189	33,601	7,278,204	19,940
Cliffs Fuel Service Co.	Rapid River, Michigan	15,540	42	67,420	185
Continental Oil Company	Billings, Montana	9,880,448	27,070	9,656,738	26,457
Continental Oil Company	Denver, Colorado	2,267,759	6,213	1,214,842	3,328
Continental Oil Company	Ponca City, Oklahoma	225,029	617	—	—
Continental Oil Company	Wrenshall, Minnesota	7,735,947	21,194	7,688,014	21,063
Consumers Power Company	Bay City, Michigan	1,852,456	5,075	4,934,770	13,520
Consumers Power Company	Marysville, Michigan	8,832,375	24,199	10,176,254	27,880
CRA Incorporated	Coffeyville, Kansas	522,924	1,433	—	—
CRA Incorporated	Phillipsburg, Kansas	522,316	1,431	125,706	344
CRA Incorporated	Scottsbluff, Nebraska	117,086	321	226,196	620
Crystal Refining Company of Carson City Inc.	Carson City & Kalamazoo, Michigan	626,611	1,717	779,673	2,136
Derby Refining Company	Wichita, Kansas	526,812	1,443	250,000	685
Detroit Edison Company	River Rouge, Michigan	1,750,394	4,796	195,568	536
Exxon Co., U.S.A.	Billings, Montana	4,749,358	13,011	5,808,592	15,914
Farmers Union Central Exchange Inc.	Laurel, Montana	5,549,407	15,204	4,362,391	11,952
Gladieux Refining Inc.	Fort Wayne, Indiana	603,003	1,652	197,925	542
Gulf Oil Corporation	Toledo, Ohio	8,274,321	22,669	4,162,049	11,403
Husky Oil Company	Cheyenne, Wyoming	1,140,572	3,125	180,000	493
Koch Refining Co.	Pine Bend, Minnesota	24,850,288	68,083	27,952,687	76,583
Lakehead Pipe Line Co. Inc.	Superior, Wisconsin	200,625	550	—	—
Laketon Asphalt Refining Inc.	Laketon, Indiana	489,623	1,341	—	—
Little America Refining Co.	Casper, Wyoming	957,165	2,622	116,949	320
Marathon Oil Company	Detroit, Michigan	5,022,897	13,761	3,492,440	9,568
Mobil Oil Company	Buffalo, New York	10,660,175	29,206	9,055,376	24,809
Mobil Oil Company	East Chicago, Indiana	266,485	730	—	—
Mobil Oil Company	Joliet, Illinois	9,280,720	25,427	3,911,281	10,716
Murphy Oil Corporation	Superior, Wisconsin	10,513,037	28,803	8,900,593	24,385
National Cooperative Refinery Ass.	McPherson, Kansas	1,192,567	3,267	165,925	455
Pasco Oil Company	Sinclair, Wyoming	563,527	1,544	189,287	519
Peoples Gas Light & Coke Utility	Joliet, Illinois	—	—	36,000	99
Phillips Petroleum Co.	Kansas City, Kansas & Great Falls, Montana	2,224,589	6,095	1,429,684	3,917

APPENDIX IX — Concluded

Exports of Canadian Crude Oil and Equivalent to the United States 1974 and 1975
(Barrels of 34.9722 Standard Gallons)

		1974		1975	
		Total for Year	Daily Average	Total for Year	Daily Average
Refinery Corporation	Denver, Colorado	353,872	970	—	—
Rock Island Oil Co.	Rock Island, Indiana	713,598	1,955	243,257	666
Shell Oil Company	Wood River, Illinois	8,767,289	24,020	4,888,232	13,393
Skelly Oil Company	El Dorado, Kansas	1,966,872	5,389	1,375,733	3,769
Standard Oil Company (Ohio)	Toledo, Ohio	12,233,330	33,516	11,625,016	31,849
Standard Oil Company (Ohio)	Lima, Ohio	293,577	804	—	—
Sun Oil Company	Toledo, Ohio	7,565,184	20,727	5,621,776	15,402
Tenneco Oil and Minerals Ltd.	Chalmette, Louisiana	1,065,000	2,918	—	—
Tesoro Petroleum	Newcastle, Wyoming & Wolf Point, Montana	212,631	582	243,731	668
Texaco Incorporated	Lockport, Illinois	5,904,489	16,177	170,012	466
Texaco Incorporated	Lawrenceville, Illinois	310,000	849	—	—
Texaco Incorporated	Casper, Wyoming	108,500	297	489,176	1,340
Total Leonard Ref. Inc.	Alma, Michigan	5,287,952	14,488	3,125,878	8,564
Union Oil Company of California	Lemont, Illinois	5,192,989	14,227	3,764,783	10,315
United Refining Company	Warren, Pennsylvania	7,278,859	19,942	3,884,718	10,643
United Refining Company	West Branch, Michigan	1,347,980	3,693	910,340	2,494
Other		—	—	1	—
Total Districts I — IV		261,610,584	716,741	196,199,653	537,533
<i>District V</i>					
Atlantic Richfield Oil Company	Cherry Point, Washington	14,906,558	40,840	11,498,697	31,503
Mobil Oil Company	Ferndale, Washington	18,472,212	50,609	15,986,345	43,798
Mohawk Oil Company Ltd.	Tacoma, Washington	124,381	341	—	—
Shell Oil Company	Anacortes, Washington	21,516,582	58,949	20,406,906	55,910
Texaco Incorporated	Anacortes, Washington	15,853,693	43,435	14,090,330	38,604
Total District V		70,873,426	194,174	61,982,278	169,815
Total U.S.A.		332,484,010	910,915	258,181,931	707,348

Source: Company reports to the Board.

APPENDIX X

Pipeline Leaks, Breaks and Malfunctions

The following is a summary of leaks, breaks, malfunctions and other pipeline incidents during the operation of pipelines reported to the Board during 1975 by companies under the jurisdiction of the National Energy Board:

Origin of Reported Incidents	Number of Incidents
Internal and external corrosion of pipe and equipment	10
Defective Mill Welds	3
Defective Field Welds	5
Pipe Material Defects	1
Defective Equipment and Piping	10
Damage during Construction by others	4
Operations	2
Lightning	1
Miscellaneous	1
Total	37

Seven incidents resulted in pipeline ruptures.

APPENDIX XI

New Licences and Orders to Export Electric Power and Energy During 1975

Applicant	Class	Kilowatts	Annual Kilowatthours (Millions)	Term	Application Heard	Issued	Licence No.
<i>A. New Licences Issued in 1975 Pursuant to Section 82</i>							
1. Fraser Companies Limited	Firm	60,000	400	25/03/75 to 31/12/79	04/12/74	13/02/75	EL-79
2. Fraser Companies Limited	Inter- ruptible	—	30	25/03/75 to 31/12/79	04/12/74	13/02/75	EL-80
3. Cominco Limited	Firm	—	600	01/07/75 to 31/12/77	02/04/75	01/05/75	EL-81
4. Cominco Limited	Inter- ruptible	—	1,500	01/07/75 to 31/12/77	02/04/75	01/05/75	EL-82
5. Canadian Niagara Power Company Limited	Firm	30	260	01/07/75 to 30/09/79	15/05/75	28/05/75	EL-83
6. Canadian Niagara Power Company Limited	Inter- ruptible	—	200	01/07/75 to 30/06/80	15/05/75	28/05/75	EL-84
7. British Columbia Hydro and Power Authority	Firm	6,000	25	01/07/75 to 30/09/79	04/04/75	05/06/75	EL-85
8. British Columbia Hydro and Power Authority	Firm		1,500 (1975-76) 1,000	01/07/75 to 30/09/79	04/04/75	05/06/75	EL-86
9. British Columbia Hydro and Power Authority	Firm		800	01/07/75 to 30/09/79	04/04/75	05/06/75	EL-87
10. British Columbia Hydro and Power Authority	Firm		2,000	01/07/75 to 30/09/79			EL-88
11. British Columbia Hydro and Power Authority	Inter- ruptible		1,400 (1974-75) 1,600 (1975-76) 5,200 (1976-77) 4,400 (1977-78) 2,800 (1978-79)	01/07/75 to 30/09/79			EL-89

APPENDIX XI – Concluded

New Licences and Orders to Export Electric Power and Energy During 1975

Applicant	Class	Kilowatts	Annual Kilowatthours (Thousands)	Term From Date of Issue-Months	Issued	Order No.
<i>B. New Orders Issued in 1975 Pursuant to section 6A of the Regulations under Part VI of the Act*</i>						
1. West Kootenay Power and Light Company Limited	Firm	20	50	36	4/12/75	ELO-113

*Under Section 6A the Board may by order authorize the exportation of not more than 4,000 kilowatts of electric power and not more than 20,000,000 kilowatthours per year of electrical energy for a term not exceeding three years upon such terms and conditions as the Board may prescribe.

Applicant	Associated Licence	Issued	Order No.
<i>C. Amending Orders Issued in 1975 Relative to Electric Power Export Licences</i>			
1. Canadian Niagara Power Company Limited	EL-58	23/01/75	AO-1-EL-58
2. Canadian Niagara Power Company Limited	EL-59	23/01/75	AO-2-EL-59
3. Ontario Hydro	EL-76	29/10/75	AO-1-EL-76
4. Southern Canada Power Company Limited	EL-30	11/12/75	AO-7-EL-30
5. Southern Canada Power Company Limited	EL-31	11/12/75	AO-7-EL-31

APPENDIX XII

Exports of Electric Energy — Calendar Year 1975

Exporter	Licence Number	Thousands of Kilowatthours						Reported Dollar Value of Export	
		Licence Authorization		Gross Energy Exported					
		Firm	Interruptible	Firm	Interruptible	Firm	Interruptible		
						\$		\$	
1. Maine and New Brunswick Electrical Power Company, Limited	EL-22 EL-23	250,000	25,000	82,566	453	821,864			1,362
2. Fraser Companies, Limited	EL-79 EL-80	400,000	30,000	244,390	—	3,113,848			—
3. The New Brunswick Electric Power Commission	EL-67 EL-68 EL-69 EL-70 EL-71 EL-72 EL-51 AO-1-EL-52 AO-1-EL-53 ELO-105 to ELO-107	473,040 102,492 100,000 131,400 1,000,000 760,500 225	 150,000 163,812 2,500,000	300,568 52,419 23,525 2,455 356,315 — 216	 15,642 4,383 540,838	6,601,404 1,293,628 (1) (1) 2,519,132 — 7,423			354,949 71,641 8,789,643
Sub-Total New Brunswick				1,062,454	561,316	14,357,299			9,217,595
4. Cedars Rapids Transmission Company Limited	ELO-110		20,000		—				—
5. Quebec Hydro-Electric Commission	EL-78 ELO-97 to 103 and 109	566	1,530,000	334	836,608	5,076			15,071,630
6. Southern Canada Power Company Limited	AO-7-EL-30 AO-7-EL-31	13,000	74,250	11,129	69,103	207,632			898,170
Sub-Total Quebec				11,463	905,711	212,708			15,969,800
7. Ontario Hydro	EL-32 AO-1-EL-76 ELO-96	15,000 10	8,250,000	1,055 10	4,268,405	2,110 267			41,797,819
8. Canadian Niagara Power Company Limited	EL-83 EL-84	260,000	200,000	199,986	39,402	2,102,229			394,022
9. The Ontario-Minnesota Pulp and Paper Company, Limited	EL-62 EL-63	262,800	87,600	185,280	—	2,182,394			—
10. The Detroit and Windsor Subway Company	ELO-111	1,000		874		—			

APPENDIX XII – Concluded

Exports of Electric Energy – Calendar Year 1975

Exporter	Licence Number	Thousands of Kilowatthours				Reported Dollar Value of Export	
		Licence Authorization		Gross Energy Exported			
		Firm	Interruptible	Firm	Interruptible	Firm	Interruptible
11. The Canadian Transit Company	ELO-104	25		24		\$	\$
12. St. Lawrence Power Company	EL-77		150,000		143,321		1,430,880
Sub-Total Ontario				387,229	4,451,128	4,287,000	43,622,721
13. Manitoba Hydro	EL-56	500,000		147,645		1,330,869	
	AO-3-EL-57		1,400,000		990,802		9,772,773
	ELO-112	15		11		266	
Sub-Total Manitoba				147,656	990,802	1,331,135	9,772,773
14. British Columbia Hydro and Power Authority	EL-85	25,000		10,325		147,591	
	EL-86	1,500,000		310,726		(1)	
	EL-87	800,000		—		—	
	EL-88	2,000,000		—		—	
	EL-89		1,400,000		1,185,607		97,752 ⁽²⁾
	ELO-108	600		186			14,323
15. Cominco Ltd.	EL-20		500,000		—		—
	EL-81	600,000		445,048		(1)	
	EL-82		1,500,000		904,984		5,862,252
16. West Kootenay Power and Light Company Limited	ELO-95	50		33		681	
Sub-Total British Columbia				766,318	2,090,591	148,272	5,974,327
Total Canada				2,375,120	8,999,548	20,336,414	84,557,216

(1) No dollar value. Carrier transfer energy wheeled through U.S.A., back to Canada.

(2) Dollar value for 16,292,000 kWh only. Balance is no value energy: exchange, storage and adjustment transfer.

APPENDIX XIII

Total Canadian Electric Energy Supply and Trade with the United States – Calendar Year 1975

(Millions of Kilowatthours)

Electric Energy Generation for all Canada – 272,636 (preliminary)

Electric Energy Importation from U.S.A. – 3,986 (preliminary)

Total Canadian Electric Energy Supply – 276,622 (preliminary)

Electric Energy Export (Gross) to U.S.A. 2,375 (firm) – 0.9% Canadian Supply

9,000 (interruptible) – 3.2% of Canadian Supply

APPENDIX XIV

Exports of Propane, Ethane and Butanes under Long Term Licences and Orders — 1975 (Volume in Barrels)

Exporter	Licence or Order Number	Period		Authorized Maximum Export Quantity in Period		1975 Actual Export	
		From	To	Gross	Net	Gross	Net
A. Propane							
1. Dome Petroleum Limited	GL-31 (AO-4) ^(a)	1/01/75	31/12/75	5,913,000	5,338,000	4,139,690	3,628,216
2. Amoco Canada Petroleum Company Ltd.	GL-32 (AO-2) ^(a)	1/01/75	31/12/75	3,533,000	3,189,000	4,159,460	2,014,890
3. PanCanadian Gas Products Ltd.	GL-34 (AO-3) ^(a)	1/01/75	31/12/75	2,380,000	2,149,000	1,731,032	1,076,417
4. Dome Petroleum Limited	GL-46 (AO-2) ^(a)	1/04/75	31/03/76	N/A	2,560,000	N/A	923,840
5. Imperial Oil Limited	EPR-69-75 ^(b)	29/01/75	30/04/75	N/A	660,000	N/A	460,856
	EPR-900-75 ^(b)	13/05/75	31/08/75	N/A	676,500	N/A	448,228
	EPR-902-75 ^(b)	16/09/75	31/12/75	N/A	676,500	N/A	586,560
B. Ethane							
1. Dome Petroleum Limited	GL-45 (AO-2) ^(a)	1/04/75	31/03/76	N/A	1,830,000	N/A	699,524
C. Butanes							
1. Dome Petroleum Limited	EBU-1-74 (AO-1) ^(c)	1/04/75	31/03/76	N/A	3,070,000	N/A	964,570
2. Dome Petroleum Limited	EBU-132-74 ^(d)	1/01/75	31/12/75	N/A	3,232,500	N/A	2,329,613
3. Amoco Canada Petroleum Company Ltd.	EBU-133-74 ^(d)	1/01/75	31/12/75	N/A	3,282,700	N/A	3,112,057
4. PanCanadian Gas Products Ltd.	EBU-134-74 ^(d)	1/01/75	31/12/75	N/A	1,338,700	N/A	787,541
5. Dome Petroleum Limited	EBU-900-75 ^(c)	1/03/75	29/02/76	N/A	1,424,000	N/A	—
6. Imperial Oil Limited	EBU-50-75 ^(d)	29/01/75	29/04/75	N/A	440,000	N/A	330,493
	EBU-901-75 ^(d)	13/05/75	31/08/75	N/A	451,000	N/A	411,983
	EBU-903-75 ^(d)	16/09/75	31/12/75	N/A	451,000	N/A	393,106

(a) See Appendix IV for licence particulars.

(b) This is an export-import order which allows the exportation of propane near Gretna, Manitoba and the importation of said propane near Sarnia, Ontario.

(c) This is an import-export order which allows the importation of butanes near Sarnia, Ontario and the exportation of said butanes near Windsor, Ontario and/or Sarnia, Ontario.

(d) This is an export-import order which allows the exportation of butanes near Gretna, Manitoba and the importation of said butanes near Sarnia, Ontario.

APPENDIX XV

Imports of Propane, Ethane and Butanes Under Long Term Licences and Orders – 1975 (Volume in Barrels)

Importer	Licence or Order Number	Period		Authorized Maximum Import Quantity in Period	1975 Actual Import
		From	To		
A. Propane					
1. Dome Petroleum Limited	GL-31(AO-4) (a)	1/01/75	31/12/75	5,913,000	3,188,874
2. Amoco Canada Petroleum Company Ltd.	GL-32(AO-2) (a)	1/01/75	31/12/75	3,533,000	2,990,024
3. PanCanadian Gas Products Ltd.	GL-34(AO-2) (a)	1/01/75	31/12/75	2,380,000	1,289,726
4. Dome Petroleum Limited	GL-46(AO-2) (a)	1/04/75	31/03/76	2,560,000	1,025,339
5. Imperial Oil Limited	EPR-69-75 (b)	29/01/75	30/04/75	660,000	460,856
	EPR-900-75 (b)	13/05/75	15/09/75	676,500	448,228
	EPR-902-75 (b)	16/09/75	15/01/76	676,500	586,560
B. Ethane					
1. Dome Petroleum Limited	GL-45(AO-2) (a)	1/04/75	31/03/76	1,830,000	756,880
C. Butanes					
1. Dome Petroleum Limited	EBU-1-74(AO-1) (c)	1/04/75	31/03/76	3,070,000	1,083,201
2. Dome Petroleum Limited	EBU-132-74 (d)	1/01/75	31/12/75	3,232,500	1,695,573
3. Amoco Canada Petroleum Company Ltd.	EBU-133-74 (d)	1/01/75	31/12/75	3,282,700	2,267,165
4. PanCanadian Gas Products Ltd.	EBU-134-74 (d)	1/01/75	31/12/75	1,338,700	585,736
5. Dome Petroleum Limited	EBU-900-75 (c)	1/03/75	29/02/75	1,424,000	—
6. Imperial Oil Limited	EBU-50-75 (d)	29/01/75	30/04/75	440,000	330,493
	EBU-901-75 (d)	13/05/75	15/09/75	451,000	411,983
	EBU-903-75 (d)	16/09/75	15/01/76	451,000	393,106

(a) See Appendix VII for licence particulars.

(b) This is an export-import order which allows the exportation of propane near Gretna, Manitoba and the importation of said propane near Sarnia, Ontario.

(c) This is an import-export order which allows the importation of butanes near Sarnia, Ontario and the exportation of said butanes near Windsor, Ontario and/or Sarnia, Ontario.

(d) This is an export-import order which allows the exportation of butanes near Gretna, Manitoba and the importation of said butanes near Sarnia, Ontario.

APPENDIX XVI – (A)

Net Exports of Propane (Volume in barrels)

Exporters	1974 (Revised)	1975
Amerada Minerals Corp. of Canada	129,875	12,015
Amoco Canada Petroleum Co. Ltd.	2,264,249	2,578,506
Burnwell Gas of Canada Ltd.	—0—	15,504
Canadian Enterprise Gas Products Ltd.	—0—	229,687
Canadian Propane Gas & Oil Ltd.	351,062	225,321
Canadian Superior Oil Ltd.	624,042	495,033
Canmore Mines Ltd.	131,314	157,707
Chevron Standard Ltd.	1,226,414	1,249,560
Cigas Products Ltd.	77,155	370,629
Consolidated Natural Gas Ltd.	44,808	—0—
C.M. Dining Co.	2,585	3,132
Dome Petroleum Ltd.	6,155,840	4,158,318
Dow Chemical of Canada Ltd.	538,895	1,029,029
Elgin Petroleum Ltd.	37,876	23,634
Gasbec Inc.	489,723	445,592
Gas Supply (Minneapolis) Ltd.	—0—	15,759
Gavan Petroleums Ltd.	52,033	40,153
Goliad Oil & Gas Co. & Goliad Ltd.	357,462	370,471
Gulf Oil Canada Ltd.	3,096,400	2,908,279
Hidrogas Ltd.	596,414	199,911
Home Oil Co. Ltd.	576,726	520,661
Hudson's Bay Oil & Gas Co. Ltd.	423,854	502,979
Imperial Oil Ltd.	980,221	868,586
Irving Oil Ltd.	2,793	2,650
Koch Oil Co. Ltd.	154,924	88,392
Latulippe Gas Propane Inc.	23	—0—
M-P Petroleum Ltd.	38,642	110,380
Mobil Oil Canada Ltd.	78,657	358,471
N.G.L. Supply Ltd.	463,667	395,476
Northern Petro Products Ltd.	141,377	118,257
Northwest LPG Supply Ltd.	89,043	125,720
Pacific Petroleums Ltd.	1,743,760	1,365,630
PanCanadian Gas Products Ltd.	1,874,835	1,154,068
Polysar Ltd.	3,716	—0—
Real Marketing Ltd.	8,201	10,307
Shaban Manufacturing Ltd.	158	236
Shell Canada Ltd.	192,061	241,000
Solar Gas Ltd.	11,756	748
Stillings Petroleum (Canada) Ltd.	—0—	922,194
Sun Oil Co. Ltd.	25,705	40,000
Superior Propane Ltd.	49	—0—
Texaco Exploration Canada Ltd.	—0—	115,509
Union Oil Co. of Canada Ltd.	275,356	204,890
Union Texas Petroleum Division	154,537	346,895
Weskem of Canada Ltd.	25,538	33,088
Totals	23,441,746	22,054,377

APPENDIX XVI – (B)

Net Exports of Butanes (Volume in barrels)

Exporters	1974 (Revised)	1975
Amerada Minerals Corp. of Canada	72,621	21,477
Amoco Canada Petroleum Co. Ltd.	1,636,739	1,763,171
Belgo Canada Manufacturing Co. Ltd.	21	14
Canadian Enterprise Gas Products Ltd.	775	304,225
Canadian Propane Gas & Oil Ltd.	—0—	8,716
Canadian Superior Oil Ltd.	671,890	372,602
Chevron Standard Ltd.	90,896	75,814
Cigas Products Ltd.	66,973	274,344
Columbia Gas Development of Canada Ltd.	—0—	150,000
Dome Petroleum Ltd.	2,038,607	1,814,371
Federated Co-Operatives Refineries Ltd.	12,978	—0—
Gas Supply (Minneapolis) Ltd.	—0—	9,738
Gavan Petroleums Ltd.	—0—	52,195
Goliad Oil & Gas Co. & Goliad Ltd.	140,133	129,090
Hidrogas Ltd.	425,908	115,125
Home Oil Co. Ltd.	120,239	190,139
Hudson's Bay Oil & Gas Co. Ltd.	1,628,568	1,675,091
Husky Oil Operations Ltd.	313,308	164,965
Imperial Oil Ltd.	64,775	379,829
Koch Oil Co. Ltd.	812,606	1,450,814
M-P Petroleum Ltd.	2,209	22,176
Mobil Oil Canada Ltd.	1,037,197	1,039,083
Murphy Oil Co. Ltd.	30,545	54,642
N.G.L. Supply Ltd.	199,197	88,884
Northern Petro Products Ltd.	77,447	56,870
Northwest LPG Supply Ltd.	87,454	—0—
Pacific Petroleums Ltd.	1,462,491	908,130
PanCanadian Gas Products Ltd.	269,892	323,575
Real Marketing Ltd.	12,910	—0—
Shell Canada Ltd.	2,163,572	2,205,776
Stillings Petroleum (Canada) Ltd.	52,089	105,720
Tenneco Oil & Minerals Ltd.	59,642	14,369
Texaco Exploration Canada Ltd.	301,531	592,147
Union Oil Co. of Canada Ltd.	—0—	6,640
Totals	13,853,213	14,369,732

APPENDIX XVII

Licences issued for Exports of Crude Oil and Condensate to U.S. — 1975

Exporter	Barrels	
	Crude	Condensate
Amoco Canada Petroleum Company Ltd.	9,980,160	1,149,009
Ashland Oil Canada Limited	28,137,277	3,476,927
Canadian Propane Gas Oil Ltd.	1,207,900	—
Clark Oil & Refining Corp.	7,702,810	2,387,363
Dome Petroleum Company Limited	—	12,166,350
Gibson Petroleum Company Limited	4,703,534	4,831
Great Canadian Oil Sands Ltd.	1,204,801	—
Gulf Oil Canada Limited	7,248,591	726,455
Hudson's Bay Oil and Gas Company Ltd.	18,460,443	7,540,312
Husky Oil Operations Ltd.	2,769,933	136,365
Imperial Oil Limited	54,981,470	1,860,476
Koch Oil Company Ltd.	27,341,135	1,186,428
Mobil Oil Canada Ltd.	28,881,150	2,039,647
Murphy Oil Company Ltd.	8,866,917	560,715
Shell Canada Ltd.	18,257,361	1,538,219
Sun Oil Company Ltd.	4,048,623	2,019,218
Texaco Exploration Canada Ltd.	18,203,514	230,570
Union Oil Company of Canada	3,238,208	543,290
Total Licences Issued in 1975	245,233,827	37,566,175

APPENDIX XVIII

Export Charges in 1975 for Crude Oil and Refined Petroleum Products (\$ barrel)

1975	Jan- uary	Feb- ruary	March	April	May	June	July	Aug- ust	Sep- tember	Octo- ber	Novem- ber	Decem- ber
Light & Medium Crude Oil	5.20	5.20	5.50	5.50	5.50	4.70	4.70 ⁽³⁾	3.20	3.45	3.45	4.50	4.50
Selected ⁽¹⁾ Crudes Less Than 28° API	4.70	4.70	5.00	5.00	5.00	4.20	4.20 ⁽³⁾	2.70	2.95	2.95	4.00	3.80
Lloydminster Type Blends	4.10	4.10	4.40	4.40	4.40	4.20	4.20 ⁽³⁾	2.70	2.95	2.95	4.00	3.70
Condensate	5.20	5.20	5.20	5.20	5.20	4.70	4.70 ⁽³⁾	3.20	3.45	3.45	4.50	4.50
Motor Gasoline	1.50	1.50	1.50	1.50	1.50	3.50 ⁽²⁾	4.25	3.50	3.50	3.50	3.50	3.50
Middle Distillates	2.00	2.00	2.00	2.00	2.00	3.50 ⁽²⁾	4.00	3.25	3.25	3.25	3.75	3.75
Heavy Fuel Oil	2.00	2.75	2.75	2.75	2.75	3.00 ⁽²⁾	3.00	1.75	1.75	1.75	1.75	1.75
Partially Processed Oils	—	—	—	—	—	—	—	3.20	3.45	3.45	4.50	4.50

- (1) I) All streams below 25° API. (Oil carried by British Petroleum Exploration Canada Limited pipeline 'Chauvin' systems in Alberta, and Area III medium crude oil in Saskatchewan are included in this category.)
 II) The Bow River Pipelines Ltd. stream in Alberta excluding light and medium production normally batched separately from the Bellshill Lake and Provost (Hamilton Lake) fields.
 III) The Bow River Pipelines Ltd. (Mid-Saskatchewan Pipeline System) stream in Saskatchewan Area II excluding any light production normally batched separately but including all Area II heavy (Smiley Coleville Type) and light crude blended with the heavy for the purpose of transportation ease (Smiley-Eureka-Doddsland).
 IV) Batches predominantly consisting of Midale/Weyburn medium gravity crude oil transported by the Trans Prairie Pipelines Ltd. and Producers Pipelines Ltd. systems from Area IV in Saskatchewan.
- (2) Effective 3 June 1975; May charge applicable 1 and 2 June.
- (3) Reduction of \$1.50 per barrel applicable in respect of volumes exported in July which entered exporting pipeline systems on or after 1 July 1975.

APPENDIX XIX

Exports of Licensed Petroleum Products — 1975 (Barrels)

	Partially Processed Oil	Motor Gasoline	Heavy Fuel Oil	Middle Distillate	Total
January	—	66,598	2,069,913	436,652	2,573,163
February	—	107,450	1,922,945	168,826	2,199,221
March	—	24,793	1,412,064	387,726	1,824,583
April	—	500,025	1,844,322	503,468	2,847,815
May	—	1,577,565	1,792,733	358,448	3,728,746
June	—	1,823,717	1,729,560	943,406	4,496,683
July	—	608,561	1,820,682	47,081	2,476,324
August	142,950	3,511	1,905,217	433,628	2,485,306
September	134,647	273,509	2,802,292	1,736,373	4,946,821
October	464,510	8,630	2,321,342	1,350,277	4,144,759
November	597,421	3,831	1,680,888	1,078,045	3,360,185
December	141,848	39,341	1,454,928	706,276	2,342,393
Total	1,481,376	5,037,531	22,756,886	8,150,206	37,425,999

APPENDIX XX

Total Number of Board Certificates, Licences, Permits, Orders and Authorizations Between 1959 and 1975

The National Energy Board Act was proclaimed on November 2, 1959



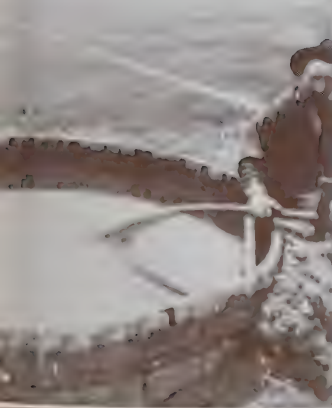
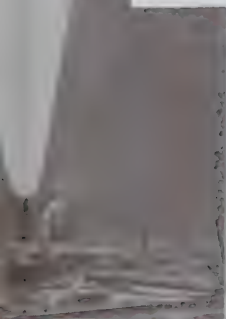
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	Horse-drawn Oil Tank Wagon — PA96294	
Natural Gas, Alberta, 1915 — PA15499	Yukon River, Yukon Territory, 1907 PA39943	
		Transmission Lines Track Crossing, Ontario, 1920's PA43408
Well #1, Alberta, 1916 PA17339	Pipes for Electrical Wiring, 1890 PAC7901	
		Drill Rig, Nova Scotia, 1922 PA15762
Pumping Oil Well, New Brunswick PA40110		Power Plant Machinery Hauling Pipeline PA22442
Power House, British Columbia PA51365	Kent County, Ontario, 1915 PA15176	Chelsea Dam, Quebec PA25102

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NATIONAL ENERGY BOARD

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**ANNUAL REPORT
1976**

Ce rapport annuel est publié séparément dans les deux langues officielles. Des copies en langue française pourront être obtenues du bureau de la division du secrétariat de l'Office national de l'énergie.

25 March, 1977

*The Honourable Alastair Gillespie, P.C.,
Minister of Energy, Mines and Resources,
Ottawa, Ontario*

Dear Sir:

In accordance with the provisions of Section 91 of the National Energy Board Act, the Revised Statutes of Canada, 1970, chapter N-6, I have the pleasure to submit the Annual Report of the National Energy Board for the year ended 31 December, 1976.

Yours faithfully,



Marshall A. Crowe,
Chairman.



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Cat. No. : NE1-1976E

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THE FUNCTIONS AND RESPONSIBILITIES OF THE NATIONAL ENERGY BOARD

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal roles: to regulate specific areas of the oil, gas and electrical industries in the public interest, and to advise the Government on the development and use of these energy resources.

The Board on its own initiative may hold inquiries into a particular aspect of the energy situation and prepare reports for the information of the Government, of Parliament and of the general public.

The Board also carries out studies and prepares reports at the request of the Minister.

The Act requires the Board to regulate many aspects of the energy industries to ensure that the interests of the public are protected. The regulatory role of the Board encompasses the following fields:

Certificates of Public Convenience and Necessity

The Board grants certificates to construct or operate interprovincial and international petroleum pipelines, and international electric power lines. Before permission is granted for construction, through a certificate of public convenience and necessity, the Board considers the application at a public hearing. The Board may, however, issue orders for relatively minor additions or modifications to pipeline systems without calling a public hearing. These would include sections, branches and extensions of pipeline not more than 25 miles in length, and ancillary installations such as tanks, pumps, compressors, meter stations, and communications systems. The Board may also by order authorize international power lines of transfer capacity not exceeding 5,000 kilowatts.

Pipeline Utility Crossings

For reasons of safety, the protection of the environment and other utility services, no pipeline may cross or be crossed by another utility without some form of regulatory authorization. Where a pipeline is to cross a navigable water or a railway, leave must be obtained from the Minister of Transport or the Canadian Transport Commission respectively. Crossings with respect to other utilities may only be made with the authorization of the Board. Authorization is made by Board order without

a public hearing after consideration of all the relevant information.

Safety Regulations

Pipeline safety is an important aspect of the Board's responsibilities, and high standards are maintained through regulations and orders, and on-site inspections by Board staff, particularly during periods of construction.

Regulation of Pipeline Tolls, Tariffs, Accounting Practices

The regulation of rates, tolls and tariffs of pipeline companies under federal jurisdiction is carried out by the Board. In the establishment of fair and reasonable rates or charges for the transportation of oil and gas in a pipeline, the Board seeks to ensure that there is no unjust discrimination against any person or locality. The rates, tolls, or tariffs allowed take into consideration the capital and operating costs of the pipeline company, and the necessity for it to earn an adequate return on its investment so as to be able to attract capital as needed to maintain and extend service.

To enable the Board to reach reasonable decisions it is essential that financial information provided by all companies be complete and in a form permitting full evaluation and comparison. This is accomplished by requiring oil and gas pipeline companies under the Board's jurisdiction to use uniform accounting classifications and practices to ensure compliance with the Board's requirements.

Licences and Orders

In considering applications for export licences, the Board is required by the National Energy Board Act to satisfy itself that the quantities of energy involved do not exceed the surplus remaining after allowance has been made for reasonably foreseeable Canadian requirements for that particular form of energy. The Board must also be satisfied that the prices charged for exports are just and reasonable in relation to the public interest.

Responsibilities under the Petroleum Administration Act

The Petroleum Administration Act, passed on June 19, 1975, empowers the federal government to impose a charge on the export of crude oil and

certain petroleum products; to provide compensation for certain petroleum costs; and to regulate the price of Canadian crude oil and natural gas in interprovincial and export trade. The Board is required to administer certain aspects of that Act.

Implementation of Board Decisions

When the Board is prepared to grant a pipeline or power line certificate or to issue a licence for the export of gas or electricity, the import of gas or the exportation of oil for a period exceeding one year, it so reports to the Governor in Council through the Minister of Energy, Mines and Resources. If the issuance of a certificate is approved by the Governor in Council, the certificate is issued by the Board or in an export case, if the licence already issued by the Board is approved by the Governor in Council, the licence goes into effect. When the Board refuses an application, the decision is not subject to referral to the Governor in Council. The Board reports on these matters as issued as public documents.

Because of the special nature of the trade in crude oil and petroleum products — specifically the use of short-term contracts and the need to make decisions on a daily basis — oil export controls (except for licences in excess of one year) are implemented directly by the Board without reference to the Governor in Council.

Applications for orders authorizing the export of propane and butane are also dealt with by the Board without reference to the Governor in Council.

Decisions regarding rates, tolls, and tariffs are implemented by the Board without reference to the Governor in Council.

Appeals of Board Decisions

The National Energy Board is a Court of Record. With regard to attendance, the swearing and examination of witnesses, the production and inspection of documents, and the enforcement of its orders, it has all the powers vested in a superior court of record.

A decision or order of the Board may be appealed to the Federal Court of Appeal providing the appeal is based upon a point of law or of jurisdiction. Leave to appeal must be obtained upon application made within one month after the making of the Board's decision or order, or within such further time as

that Court, under special circumstances, allows. Judgments of the Federal Court of Appeal may, with leave, be appealed to the Supreme Court of Canada. The Federal Court of Appeal also has jurisdiction to review and set aside a decision or order of the National Energy Board upon certain stipulated grounds.

The Trial Division of the Federal Court of Canada has exclusive jurisdiction to issue an injunction, writ of certiorari, writ of prohibition, writ of mandamus, or writ of quo warranto, or grant declaratory relief against any Federal Board, Commission or other tribunal.

REVIEW OF THE YEAR

Supply and Demand

Domestic crude oil production capacity continued in 1976 to exceed actual production, which averaged an estimated 1,435 Mb/d (thousand barrels per day) compared with the 1,576 Mb/d average of 1975.

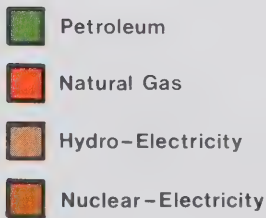
As determined by the Board's findings following a public hearing in 1975, the surplus of crude oil and equivalent hydrocarbons authorized for export in 1976 fell to an average of 470 Mb/d from the 707 Mb/d level of 1975. The lower level was also partly due to the commencement of oil movement through the Interprovincial PipeLine Limited's new extension from Sarnia, Ontario, to Montreal, Quebec.

Licences issued during 1976 authorized exports totalling 171.6 million barrels of crude oil and equivalent hydrocarbons. A total of 29.3 million barrels of refined petroleum products were also declared surplus to Canadian requirements and authorized for export. (This figure excludes the volumes approved for export over periods up to six years as further discussed in the Operations Review section.) Not all of the quantities licensed for export were shipped during the year.

Figure 1: CANADIAN CONSUMPTION OF SELECTED ENERGIES

	1972	1973	1974	1975(p)	1976(e)
Petroleum	3139.7	3278.3	3338.1	3307.7	3380.4
Natural Gas	1527.5	1633.4	1666.0	1707.8	1767.1
Hydro-Electricity	589.0	615.0	680.9	670.6	737.1
Nuclear-Electricity	23.0	48.6	47.3	40.5	47.9
Total	5279.2	5575.3	5732.3	5726.6	5932.5

(p) preliminary
(e) estimated



TRILLIONS OF BTU'S

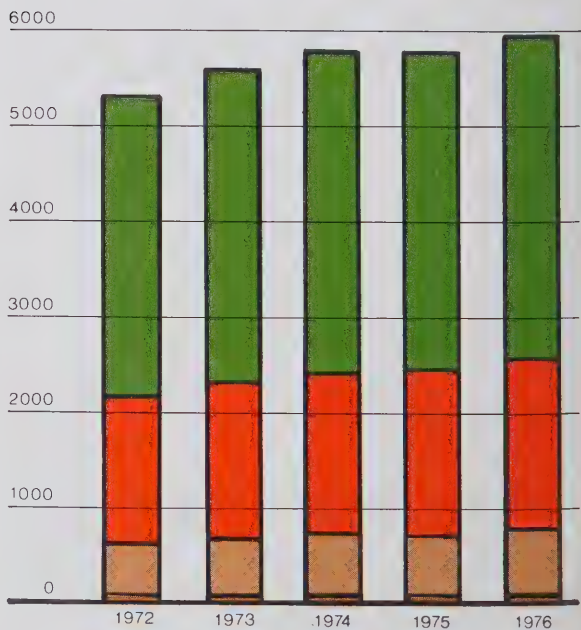
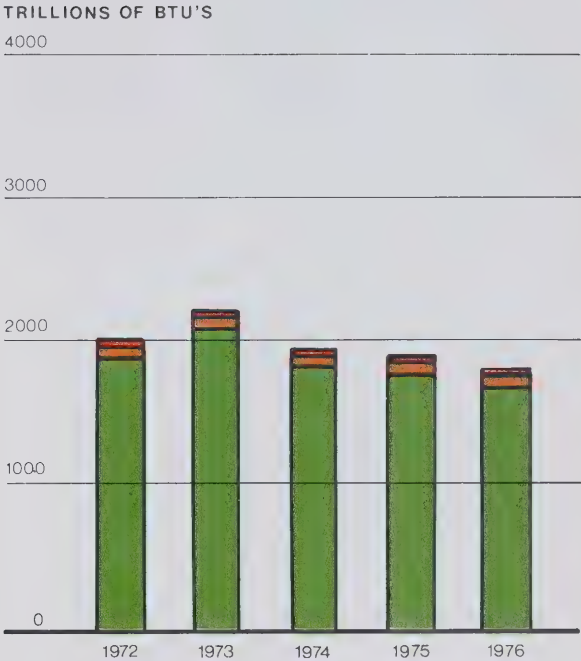
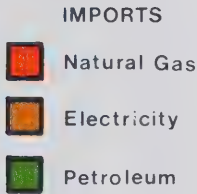


Figure 2(a): **IMPORTS OF PETROLEUM, NATURAL GAS AND ELECTRICITY**

	1972	1973	1974	1975	1976 ^(e)
Petroleum	1960.6	2152.7	1888.5	1825.1	1706.1
Natural Gas	16.2	15.3	13.8	10.6	4.2
Electricity	23.8	22.5	24.4	39.9	35.9
Total	2000.6	2190.5	1920.7	1875.6	1746.2

(e) estimated



Production of marketable natural gas increased from 2,447 Bcf (billion cubic feet) in 1975 to an estimated 2,490 Bcf in 1976. Of this production 1,345 Bcf were net sales to ultimate consumers in Canada while 934 Bcf, or 38 per cent, were exported to the United States. Net sales growth in Canada was only 1.6 per cent.

Consumption in all provinces changed only marginally from 1975 levels as a result of conservation, the slowdown in economic expansion, and price increases. Exports again declined slightly from the 1975 volume of 947 Bcf.

Canada's total net electrical generating capability at the end of 1976 was approximately 64,000 MW (megawatts), of which hydroelectric plants accounted for approximately 61 per cent, conventional thermal stations 35 per cent and nuclear power 4 per cent. Total Canadian consumption of electric energy in 1976 is estimated to have been 284,000 GWh (gigawatthours), up about 7 per cent from 1975.

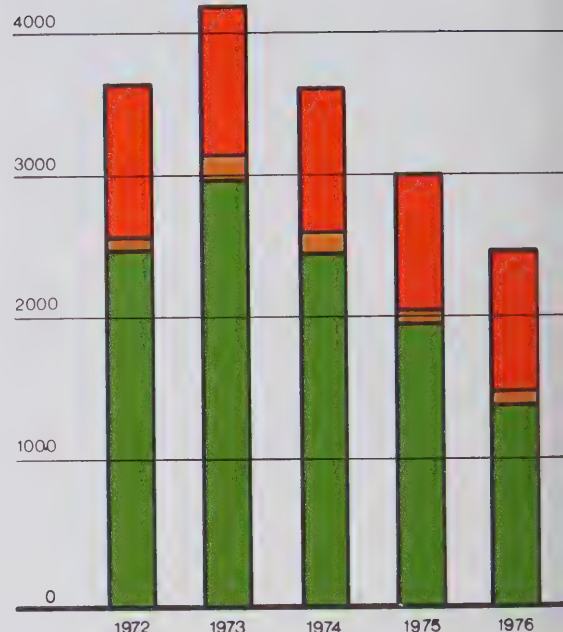
Figure 2(b): **EXPORTS OF PETROLEUM,
NATURAL GAS AND
ELECTRICITY**

	1972	1973	1974	1975	1976 ^(e)
Petroleum	2467.5	2956.8	2446.5	1923.0	1349.1
Natural Gas	1045.0	1063.9	992.8	980.0	987.0
Electricity	103.8	168.8	154.0	113.8	128.0
Total	3616.3	4189.5	3593.3	3016.8	2464.1

(e) estimated



TRILLIONS OF BTU'S



Oil and Gas Reserves

The Board's estimate of established remaining reserves of marketable natural gas in the conventional producing areas as of December 31, 1975 is 59.0 Tcf (trillion cubic feet) at 1,000 Btu/cf (British Thermal Units per cubic foot), 0.8 Tcf lower than its December 31, 1974 estimate.

Additions to initial marketable reserves during 1975 of 1.7 Tcf were substantially below the annual average of 2.9 Tcf recorded for the preceding five-year period, and were insufficient to offset the year's production. Additions to initial marketable reserves were 2.3 Tcf in Alberta, reasonably in line with historical rates; however, British Columbia, Saskatchewan, and the southern parts of the Yukon and Northwest Territories (excluding the Mackenzie Delta, Norman Wells and Arctic Islands) all experienced a net decline in total of 0.6 Tcf, reflecting downward revision of reserves of certain pools. Affected particularly were the Beaver River field in British Columbia and the Pointed Mountain field in the Northwest Territories.

The Board has refrained from publishing estimates of reserves in the nation's frontier areas at this time, since it will be considering evidence in this regard given at the Mackenzie Valley-Yukon Pipeline Hearing currently in progress.

TABLE

Estimate of established reserves of marketable natural gas at December 31, 1975. (Tcf at 1000 BTU/cf.)

	Initial	Remaining
British Columbia	9.6 (Tcf)	5.6
Alberta	73.0	51.3
Saskatchewan	1.9	1.1
Southern parts of Yukon & Northwest Territories (excludes Mackenzie Delta, Norman Wells and Arctic Islands)	0.8	0.7
Western Canada Total	85.3	58.7
Ontario and Eastern Canada	1.0	0.3
Canada Total	86.3	59.0

The Board's estimate of established remaining reserves of crude oil as of December 31, 1975 is 6,474.3 MMstb (million stock tank barrels), 403.6 MMstb lower than the December 31, 1974 estimate.

Additions to initial recoverable reserves during 1975 were a nominal 101.0 MMstb. Production for the year was 504.6 MMstb.

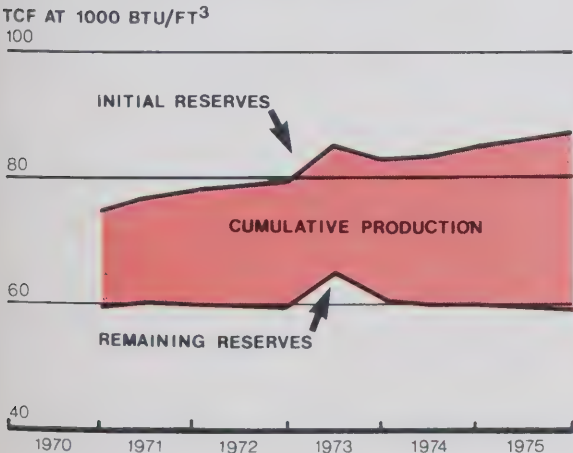
TABLE

Established reserves of crude oil in Canada at December 31, 1975.

	Initial (MMstb)	Remaining
British Columbia	400.6	138.1
Alberta	11,073.6	5,534.6
Saskatchewan	2,142.5	705.7
Manitoba	157.6	47.2
Northwest Territories	60.0	41.2
Western Canada Total	13,834.3	6,466.8
Ontario	60.9	7.5
Canada Total	13,895.2	6,474.3

Note: Natural gas liquids and pentanes plus not included.

Figure 3: **ESTABLISHED RESERVES OF OF MARKETABLE NATURAL GAS FROM CONVENTIONAL PRODUCING AREAS**



Public Hearings

During 1976, the Board conducted all or part of fourteen public hearings in various locations from Inuvik, Northwest Territories to Longueuil, Quebec. In total the Board sat for 241 days of public hearings on matters which ranged from a one-day hearing concerning authority to work or prospect for mines and minerals lying under a pipeline to proceedings on the Mackenzie Valley-Yukon natural gas pipeline applications.

The most significant of these hearings in terms of general public interest were:

- Manitoba Hydro applied to construct a 230 kV (kilovolt) power line of approximately 100 miles in length from Ridgeway Substation northeast of Winnipeg to a point on the international boundary near Sprague, Manitoba, and to export power. The application was approved.
- Hydro Quebec applied to construct a 765 kV power line of approximately 35 miles in length from a proposed substation near Beauharnois, southwest of Montreal, to a point on the international boundary near Dundee, Quebec, and to export power. The application was approved.
- Interprovincial Pipe Line Limited rate hearing which commenced in September, marking the first public hearing conducted by the Board into the financial operations of an oil pipeline. This hearing is still in progress.
- Canadian Oil: Supply and Requirements hearing held in October 1976. The new twenty-year forecast of supply and demand resulting from this hearing will be used in determining the volume of crude oil available for export in 1977.
- Joint Hearing on Mackenzie Valley-Yukon natural gas pipeline projects commenced in April with two major competing proposals to build a Mackenzie Valley pipeline. The hearing was expanded in October to include consideration of a third project which would move Alaskan North Slope gas across the southern Yukon Territory, rather than up the Mackenzie Valley.

The Board issued 2,284 certificates, licences, permits, orders and authorizations during 1976.

Litigation

In April, 1975, the National Energy Board had appointed Marshall A. Crowe as Chairman, together with Jacques Farmer and W.A. Scotland as members, of a panel to hear applications for the construction of a Mackenzie Valley natural gas pipeline.

Mr. Crowe had, at one time, been Chairman of the Canada Development Corporation, which had been one of the members of the Gas Arctic-Northwestern Project Study Group, and Mr. Crowe had participated in the work of this Study Group. These facts were set out in Mr. Crowe's opening statement at the beginning of the hearing in October of 1975. Five persons objected to the presence of Mr. Crowe on the panel. As a result of these objections, the Board itself referred the following question to the Federal Court of Appeal for determination:

"Would the Board err in rejecting the objections and in holding that Mr. Crowe was not disqualified from being a member of the panel on the grounds of reasonable apprehension or reasonable likelihood of bias."

In December of 1975, the Federal Court of Appeal answered the question put in the negative.

Following the Federal Court of Appeal's decision, three parties before that Court, namely the Committee for Justice and Liberty Foundation, the Consumers Association of Canada and the Canadian Arctic Resources Committee, having obtained leave to do so, appealed the decision of the Federal Court of Appeal to the Supreme Court of Canada.

The Supreme Court of Canada, after hearing three days of argument on the matter on March 8, 9 and 10 of 1976, on March 11 allowed the appeal, set aside the decision of the Federal Court of Appeal and declared that the question which had been put to that Court should be answered in the affirmative. The Supreme Court subsequently gave extensive reasons for its judgment with dissents to the majority opinion being expressed by three Members of the Court which consisted of eight judges.

Mr. Crowe then withdrew completely from any participation in the hearing of the applications for the construction of a Mackenzie Valley natural gas pipeline and three other Board Members, Mr. J.G. Stabback, Mr. C.G. Edge, and Mr. R.F. Brooks were appointed by the Board to hear the applications, which hearing commenced on April 12, 1976.

The Board also became involved in litigation as a named party on two other occasions arising out of its activities during 1976.

In March, following a public hearing, the Board announced its decision to issue to The Manitoba Hydro Electric Board, a certificate of public convenience and necessity for the construction and operation of an international power line, and four licences for the export of electric power and energy. The international power line authorized by the certificate extends from Manitoba Hydro's Ridgeway substation near Winnipeg, to the international boundary near Sprague in the Province of Manitoba. The certificate was conditioned by the Board with respect to the location, construction, and maintenance of the international power line, including measures for the protection of the environment both during and after construction.

On March 31, Manitoba Hydro applied to the Federal Court of Appeal for leave to appeal under section 18 of the National Energy Board Act and for an extension of time to commence an application for judicial review of the Board's decision under section 28 of the Federal Court Act. Both applications related to that part of the Board's decision respecting the conditions contained in the certificate. Manitoba Hydro takes the position that the Board has no jurisdiction under the National Energy Board Act to regulate the location or the conditions of construction or maintenance of an international power line. Alternatively, Manitoba Hydro submits that if the National Energy Board Act does confer upon the Board the power to impose such conditions, such powers are ultra vires the Parliament of Canada in that they are not necessary to the exercise of control over exports and infringe directly upon the exclusive powers of the legislature of the Province of Manitoba over the management and sale of public lands within the province, property and civil rights and matters of a purely local or private nature.

These applications were considered, upon written submissions, by the Federal Court of Appeal. On August 25, the Court granted leave to Manitoba Hydro to appeal the Board's decision and the Court dismissed the application for an extension of time to commence an application for judicial review. The appeal will likely be heard by the Court of Appeal during 1977.

In April, the Board issued its decision in an application by Saskatchewan Power Corporation and its subsidiary, Many Islands Pipe Lines Limited, respect-

ing the filing with the Board by TransCanada PipeLines Limited of a contract under subsection 51(2) of the National Energy Board Act. In July, 1975, TransCanada PipeLines Limited filed with the Board a contract dated November 1, 1969, between itself on the one part and Saskatchewan Power Corporation and Many Islands Pipe Lines Limited on the other. The contract provided for the sale of gas by Saskatchewan Power Corporation and Many Islands Pipe Lines Limited to TransCanada during the period from 1969 to 1975. Under the terms of the contract, Saskatchewan Power Corporation and Many Islands Pipe Lines Limited were granted an option to re-purchase, during the period between 1976 and 1981, volumes of gas equivalent to those previously delivered to TransCanada. The Board in its decision held that the contract was properly filed with it under subsection 51(2) and that the sale of gas under the contract by TransCanada was subject to the regulation by the Board of TransCanada's rates and tolls under Part IV of the National Energy Board Act.

Saskatchewan Power Corporation and Many Islands Pipe Lines Limited applied to the Federal Court of Appeal for leave to appeal the Board's decision under section 18 of the National Energy Board Act and also applied for judicial review of the Board's decision under section 28 of the Federal Court Act. The Board's decision was challenged on the grounds that Part IV of the National Energy Board Act had no application to the contract in question and alternatively, if the Act does apply, that section 50 of the Act is ultra vires the Parliament of Canada in that it deals with matters relating exclusively to property and civil rights within the Province of Saskatchewan. The application for leave to appeal, the section 28 application and the appeal were heard concurrently by the Federal Court of Appeal on December 7 and 8, 1976. The Federal Court of Appeal has reserved its decision on both the appeal and the section 28 application.

Membership of the Board

Mr. Douglas M. Fraser, a Member of the Board since its establishment in 1959 and Vice-Chairman since 1968, retired in 1976 after a long and distinguished career. Prior to his appointment to the Board, his positions had included Assistant Secretary of the Wartime Industries Control Board; Economic Advisor to the Royal Commission on Coal; Chief of the Commercial Services Division, Department of Trade and Industry, Nova Scotia; and Director, Energy Studies Branch, Department of Trade and Commerce.

Mr. Jack G. Stabback, Associate Vice-Chairman of the Board since 1974, succeeded Mr. Fraser as Vice-Chairman. Mr. Stabback joined the Board as Chief Engineer in 1964 and was appointed a member of the Board in 1968.

Mr. Robert A. Stead, who has been Secretary to the Board since 1966, Director General of Operations from 1972 to 1974, and Special Advisor to the Chairman since October, 1974, was appointed a member of the Board in July, 1976. Before his service with the Board, Mr. Stead was Deputy Naval Secretary, Royal Canadian Navy.

Mr. Brian H. Whittle succeeded Mr. Stead as Secretary to the Board in 1976. Mr. Whittle had served as Assistant Secretary and Director of Administration since 1967. Before his service with the Board, Mr. Whittle had held the appointment of Assistant Secretary of the Defence Council and had previously been Assistant Naval Secretary, Royal Canadian Navy.

At the end of 1976, the Board was one member short of its authorized complement of nine.

Budget and Personnel

During the fiscal year 1976-77, the Board's budget is \$9,713,000 with a man-year allocation of 336. During 1975-76 the budget was \$7,950,000 with 321 man-years.

Official Languages Act

The Board has continued its efforts to improve its capability to provide service in both official languages, and to promote the use of both official languages in its internal organization. During the year, 43 employees of the Board began or continued language training.

Metric Commission

The oil and gas industry will likely complete the conversion to the International System of Units by late 1978 or early 1979. The Board has been actively participating in the work of the Sector Conversion Committees and has been reviewing its Act, regulations and activities with the objective of achieving orderly conversion to metric in the same time frame.

The Board expects that the NEB Act will be amended to incorporate metric units in the second omnibus bill respecting metric conversion.

EXPLORATION & DEVELOPMENT ACTIVITY OIL & GAS

Exploration in the conventional producing areas of Western Canada during most of 1976 increased significantly. Year-end preliminary estimates indicate that approximately 2,300 exploratory wells were drilled in 1976, compared with 1,645 wells drilled in 1975. The increase in activity during 1976 is attributed to higher crude oil and natural gas prices plus drilling incentives offered by provincial governments.

Year-end estimates indicate that more than 3,100 development wells were drilled during 1976 in the producing areas of Western Canada, an increase of approximately 700 wells over the number drilled in 1975.

In the frontier areas, drilling activity declined for the third consecutive year. Thirty-eight wells were drilled in the Mackenzie Delta, Beaufort Sea, Arctic Island and the East Coast offshore areas compared with fifty-one well completions during 1975.

The following is a resumé of the more significant exploration activities which took place during the year. Their locations are identified on the accompanying map.

In Alberta, potentially significant discoveries of gas from the Devonian were made in the deep basin area of Alberta at Pinto (No. 1) and Pass Creek (No. 2) 180 and 130 miles west of Edmonton respectively. Also in the central foothills area a potentially significant triple zone (Mississippian, Triassic and Jurassic) gas discovery was made by Pan Canadian at Findley (No. 3) approximately 220 miles west of Edmonton. Significant extensions were made in the Limestone Mountain — Willson Creek (Discoveries in 1974 and 1975) and Burnt Timber areas (No. 4) of the west central foothills area of Alberta. Development of shallow gas reserves in the southeastern portion of the province (No. 5) continued. Also deeper drilling in this area has resulted in discovery of some additional reserves of gas and heavy oil. Development drilling in the shallow gas area in the northwest portion of the province in the Peace River area (No. 6) continued at a rapid pace during the early part of the year. It is anticipated that this area will remain very active during 1977.

Exploratory drilling for gas in Saskatchewan declined sharply in the western and central part of the province. Deep exploratory drilling for oil in the south-east portion of the province continued with a new reported Winnipegosis (Devonian) and Winnipeg

(Ordovician) oil discovery at Minton (No. 7) approximately 90 miles south of Regina.

In Manitoba, exploratory drilling was nominal and there were no discoveries.

Exploratory activity in British Columbia increased during 1976 mainly due to changes in provincial government regulations and gas pricing. New oil and gas prices and reductions in provincial royalty to be effective in 1977 are expected to further increase drilling activity near year-end of 1976 and in 1977. The Helmet area (No. 8) was very active. A still higher level of activity in the province is expected in 1977.

A well in the Mackenzie Delta area, Imperial North Netserk F-40 (No. 9), found gas. This well was drilled offshore from an artificial island. The significance of this discovery cannot be fully appraised without further drilling. In the Parsons Lake area (No. 10) five step out wells found gas and one discovered oil. The first wells in deeper waters of the Beaufort Sea were drilled in 1976 (No. 11). One well was prematurely abandoned after encountering fresh water flows with attendant mechanical difficulties and the second well was suspended at the end of the drilling season.

In the Arctic Islands, Jackson Bay G-16A (No. 12), drilled from an ice platform well off Ellef Rignes Island, discovered gas. Hecla P-62 (No. 13), a development well in the Hecla gas field, proved up gas reserves in a new discovery horizon in addition to the main producing horizon. On Cameron Island, Bent Horn A-02 (No. 14), the second successful follow up to the discovery well, was completed. The well flowed at rates up to 6,000 barrels of oil per day with no water.

Exploratory drilling in the East Coast offshore resulted in gas condensate discovery at Eastcan Snorri J-90 (No. 15) and encouraging hydrocarbon shows at PetroCan Shell Penobscot K-30 (No. 16). Other wells (No. 17) drilled offshore Nova Scotia and Labrador were unsuccessful.



1. Pinto (Devonian Gas Discovery)
2. Pass Creek (Devonian Gas Discovery)
3. Findley (Mississippian-Triassic-Jurassic Gas Discovery)
4. Limestone Mountain-Willson Creek-Burnt Timber (Miss. and Devonian Gas Development)
5. Southeastern Alberta (Shallow Gas Development)
6. Peace River Area (Continued Gas Development)
7. Minton (Devonian and Ordovician Oil Discovery)
8. Helmet (Exploratory Drilling)
9. Netserk (Gas Discovery)
10. Parsons Lake (Gas Development)
11. Beaufort Sea (Exploratory Drilling)
12. Jackson Bay (Gas Discovery)
13. Hecla (Gas Development)
14. Bent Horn (Oil Development)
15. Snorri (Gas Condensate Discovery)
16. Penobscot (Hydrocarbon Shows)
17. East Coast Offshore (Abandonments)

OPERATIONS REVIEW

OIL AND PETROLEUM PRODUCTS

In 1976, there was moderate growth in the demand for petroleum products, with most of the increase occurring in heavy fuel oil. A combination of inclement weather in the summer and conservation measures kept motor gasoline demand in central and eastern Canada at less than one per cent over 1975 demand levels.

Several changes occurred in the wellhead prices of Canadian crude oils. In accordance with the policy of a progressive movement toward world prices, a further general increase of \$1.05 per barrel took place in the wellhead price of Canadian crude oil and equivalent, effective July 1, 1976. The Alberta authorities took action on August 1 designed to assist the marketability of heavy grades of crude oil, reducing the posted prices of these grades by 35 cents per barrel, an action which was since paralleled by the industry in Saskatchewan.

Crude Oil Production, Exports and Imports

An estimated average of 1,587 Mb/d of crude oil and natural gas liquids was produced in 1976, which was 147 Mb/d or 8 per cent lower than the average daily production of 1975. The decline resulted from a fall of crude oil exports to an estimated average level of 465 Mb/d, some 34 per cent less than in 1975, and was offset by increased Canadian demand in Montreal.

The entering into service of the extension of the Interprovincial Pipe Line Limited's system from Sarnia, Ontario to Montreal, Quebec was directly reflected in the level of exports during the year. In the first six months, exports averaged 510 Mb/d, then with the start-up of the line were reduced progressively to only 385 Mb/d in December.

The year 1976 was characterized by continuing weakness in the demand for heavy crude oils. The demand for heavy crude oils, particularly asphalt-producing types, is markedly seasonal and in late November the decision was made for an interim arrangement covering exports in early 1977, whereby the exportable surpluses of light and heavy crude would be determined independently and licensed separately for export. This resulted in additional heavy crude oil exports and consequent benefits to heavy crude oil producers.

A further development affecting the supply of crude oil was the approval by Canadian and United States authorities of a number of exchanges between Canadian and U.S. companies of specified amounts of Canadian crude oil for equal volumes of oil of U.S. domestic origin. These arrangements were initiated to facilitate the supply of feedstock to refineries in the Northern Tier region of the United States; the first of such exchanges commenced in August. Details are contained in Appendix XXI.

Imported oil continued to be readily available and prices charged by the major producing countries remained fairly stable in contrast with the increases experienced in previous years. Ocean freight rates also demonstrated a degree of stability. Imports of crude oil and equivalent to eastern Canada in 1976 decreased to an estimated level of 766 Mb/d compared with 817 Mb/d in 1975.

Refined Products Demand

Demand within Canada for petroleum products was slightly higher than in 1975; namely, 1,753 Mb/d for an increase of 33 Mb/d. There were, however, large variations in demand between products and regions. Demand for motor gasolines grew at rates lower than experienced historically, showing an average increase of 2.8 per cent or 16.5 Mb/d. The major increases in demand for heavy fuel oil resulted from an improvement in economic activity and large increases in requirements for thermal generation of electricity at plants such as Coleson's Cove in New Brunswick, and Lennox, Ontario.

Refined Products Supply

Refinery crude runs averaged 1,716 Mb/d in 1976, 7 Mb/d more than in 1975. Refined product imports at 35 Mb/d were 7 Mb/d lower than in 1975. Refined product exports of 185 Mb/d were approximately 97 per cent of the 1975 level.

The opening of the crude oil pipeline from Sarnia to Montreal and the consequent utilization of Canadian crudes at Montreal refineries resulted in a relative shift toward increased production of light oils and petrochemical feedstocks by the fourth quarter of 1976.

A sharp drop occurred in the refinery capacity available in eastern Canada when Newfoundland Refining Company's 100 Mb/d plant at Come-By-Chance, Newfoundland, was closed in February 1976. In December, Petrosar's new refinery at Sarnia began to receive crude oil from western Canada; this 170 Mb/d installation (although designed primarily for the manufacture of petrochemical feedstocks) will provide a full range of refined petroleum products.

For the first time, the Board entertained applications for the export of petroleum products in the form of licences valid for periods exceeding one year. In September 1976, three companies applied for licences to export 125 million barrels of refined product, mainly heavy fuel oil, over periods up to seven years in duration.

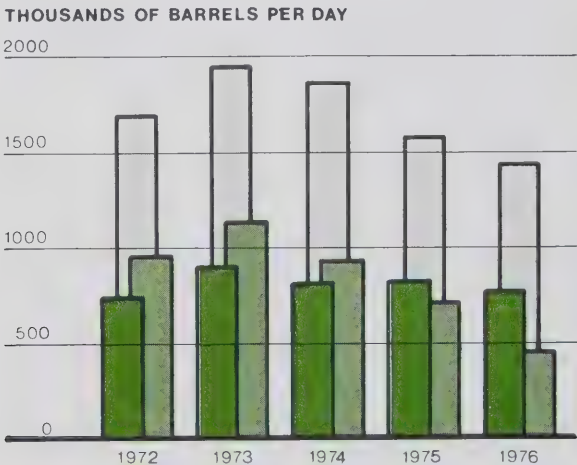
A joint hearing was held in September on these applications from Union Carbide Canada Limited, Sun Oil Company and Imperial Oil Limited and in December, the Board announced the granting of four licences.

Union Carbide was granted a five-year export licence beginning September 1, 1977 to export a total of 47,412,000 barrels of residual fuel oil to Consumers' Power Company of Jackson, Michigan, subject, after 1979, to annual determinations of surplus and just and reasonable export price. Sun Oil Company Limited was granted a six-year licence to export a yearly total of 7,117,500 barrels of heavy fuel oil to Detroit Edison Company, Detroit, Michigan, subject, after 1979, to annual surplus and price consideration. Imperial Oil was granted two licences to export a total of 7,600,000 barrels to Exxon Corporation for delivery to Cliff Fuel Service Corporation, Rapid River, Michigan and a total of 18,250,000 barrels to Consumers' Power Company, Essexville, Michigan, both for a five-year period starting January 1, 1977 and both subject, after 1978, to annual surplus determinations, and, after 1979, to determination of the just and reasonable export prices.

Figure 5: **CRUDE OIL AND EQUIVALENT HYDROCARBONS PRODUCTION, IMPORTS AND EXPORTS 1972 TO 1976**

	1972	1973	1974	1975	1976 ^(e)
Canadian Production	1689.3	1963.0	1843.3	1576.1	1434.5
Exports	951.3	1138.6	910.9	707.4	464.3
Imports	769.6	897.4	797.6	818.0	766.3

(e) estimated



Charges on Licensed Exports

The levels of export charge applicable during 1976 are given in Appendix XVIII. Adjustments were made throughout the year to reflect the competitive position of Canadian crude oils and products; variations in the foreign exchange value of the Canadian dollar played a larger role in these than heretofore.

Canadian Oil Supply and Requirements Hearing

In October, 1976 the Board conducted its periodic hearing on the supply and demand prospects for Canadian oil, and received detailed information from a broad group of participants. It was anticipated that the corresponding report, determining the permissible levels of oil exports for 1977, would be published in the early part of that year.

In November, the Board announced that pending the outcome of the Oil Supply and Requirements Hearing held in October, it had made a decision with respect to exports of crude oil and equivalent hydrocarbons from January 1, 1977 until further notice. The main points were:

- light crude oil and heavy crude oil would be licensed separately
- based on the data and the formula contained in the Board's September 1975 Report on Canadian Oil Supply and Requirements, the volume of light crude oil available for licensing would be 180 Mb/d
- the volume of heavy crude oil available for licensing would be the difference between the Board's estimates of Canadian heavy oil production and Canadian demand, anticipated to be some 125 Mb/d for January
- steps would be taken, if necessary, to maintain minimum exports of Lloydminster-type blend crude oil at the current level
- the volumes to be licensed for January would be determined early in December when the January nominations of Canadian refiners had been received

The Board stated that the levels of export for the balance of the year would be determined upon publication, early in 1977, of the Board's report of its findings on the October hearing.

Oil Pipeline Construction

The most significant items were as follows:

Interprovincial Pipe Line Limited completed construction in the spring of 1976 of the 520-mile pipeline extension from Sarnia, Ontario, to Montreal, Quebec. Deliveries of western crude oil started entering the Montreal market in June, 1976. However the Board ruled that due to the presence of anomalies in the pipeline detected by an electronic device, the maximum operating pressure in the Montreal extension would be restricted for the time being to 50 per cent of what would have otherwise been allowed. Interprovincial is now locating these defects and a repair program is presently underway. Inspection by the Board will be carried out during the work.

The construction of the Sarnia-Montreal line created a considerable number of difficulties, particularly for farmers in certain areas who found it difficult, if not impossible, to maintain normal agricultural production in areas where new pipeline had been constructed. In an effort to determine by field inspection the causes of these concerns, the Board investigated many individual complaints received and required Interprovincial to take corrective action. The Board also instituted a survey of landowners in order to obtain more complete information on the problems experienced with a view to reducing such difficulties in the future.

Interprovincial has completed a successful retest of portions of its original Line #1 from Edmonton, Alberta, to Regina, Saskatchewan. The company is constructing two new pump stations located at Milden, Saskatchewan, and Craik, Saskatchewan for the original Line #1, to maintain the throughput of oil in the pipeline system.

The Board instructed Interprovincial to retest certain sections of Line #3 between Edmonton, Alberta, and Hardisty, Alberta due to pipeline incidents at Strome, Alberta, and this retest was successfully carried out in the summer of 1976.

Trans-Northern Pipe Line Company has increased its capability to deliver refined product to the Kingston-Ottawa area by replacing 13.4 miles of pipe in the Ottawa lateral with larger pipe, reactivating the Kilbirnie and Bowmanville pump stations, deactivating the Chesterville booster station and leasing 15 miles of piping facilities located in the Toronto area from Sun Canadian Pipeline Company. Board inspection was carried on during this work.

Cochin Pipe Lines Ltd., has been granted leave to construct the first phase of the Cochin project. This phase will consist of 610 miles of pipeline from Fort Saskatchewan, Alberta to Elmore, Saskatchewan, and 90 miles of pipeline from the international border near Windsor, Ontario, to Sarnia, Ontario. Cochin expects to commence main line construction in the spring of 1977. This construction is subject to inspection by the Board.

Wascana Pipe Line Ltd. applied for, and the Board granted, permission to reverse the direction of flow of oil in its present facilities so that Montana crude oil can be transported to connecting facilities at Regina, Saskatchewan, for eventual delivery to Superior, Wisconsin.

Murphy Oil Company Limited's application to extend its Kerrobert to Dulwich pipeline system to Blackfoot, Alberta was approved.

Kitimat Pipeline Company Application

Kitimat Pipeline Company, composed of a consortium of Canadian pipeline companies and northern United States refiners, has been studying alternative methods of supplying Alaskan crude oil to U.S. Northern Tier refiners that are heavily dependent on this crude. The consortium consisted of Ashland Oil Canada Limited, Farmer's Union Central Exchange Incorporated, Hudson's Bay Oil and Gas Company Limited, Interprovincial Pipe Line Limited, Koch Industries, Inc., and Murphy Oil Corporation. An application for a Certificate of Public Convenience and Necessity for a pipeline system from Kitimat, British Columbia, to Edmonton, Alberta was filed on December 8, 1976. Under this proposal, Alaskan and offshore crude oil, arriving by tanker at Kitimat and pumped to Edmonton, would be trans-shipped through Interprovincial Pipe Line facilities to the Northern Tier refiners in the United States.

Pipeline Regulations

Draft oil pipeline regulations were circulated to industry and other interested parties for comments. These regulations are now in the final stages of formulation prior to submission to the Department of Justice.

Existing gas pipeline regulations are being studied with a view to preparing a composite issue of pipeline regulations for all petroleum pipelines transporting oil, products, natural gas and natural gas liquids.

The recommendations set forth by the Law Reform Commission on Expropriation presented to the Minister of Justice during March, 1976 are being implemented wherever possible to alleviate at least some of the objections created by expropriation.

Rates and Tariffs

On September 21, 1975, the Board commenced a public hearing to ascertain whether the tolls charged by Interprovincial Pipe Line Limited are just and reasonable and to ensure that the company does not make any unjust discrimination in tolls, services or facilities against any person or locality. The first part of the three-part hearing was completed October 13, 1976, and the second part commenced December 6, 1976, and was adjourned December 15, 1976.

During the year, the Board informed Trans-Northern Pipe Line Company, Trans Mountain Pipe Line Company Ltd. and Westcoast Transmission Company Limited that the Board proposes to conduct public hearings in 1977 into the justness and reasonableness of their rates, tolls and tariffs.

NATURAL GAS

1976 was a year of considerable uncertainty in the natural gas industry in Canada. The impact of higher prices, industrial stagnation and conservation each contributed to a minimum rate of growth in the domestic consumption of natural gas. However higher producer revenues have resulted in an increase in drilling activity in the conventional producing areas, and the short-run prospects for improved deliverability of gas were consequently enhanced.

Natural Gas Production and Consumption

Production of marketable natural gas increased by 43 Bcf from 1975 levels, with demand relatively constant for a second year due to uncertainties in the ability to contract for new supplies of gas on a long term basis. The Province of Quebec showed the greatest change in net sales growth, up 5 per cent over 1975 compared to a national average of 1.6 per cent.

For Canada as a whole, residential sales increased 7 per cent in 1976, somewhat higher than the one per cent increase recorded a year earlier. Commercial sales also increased in 1976, up 4 per cent compared to 3.6 per cent in 1975 over 1974. Consumption of natural gas by industrial customers, the largest single market entity, declined 2 per cent below 1975.

Domestic Natural Gas Pricing

The new responsibilities concerning domestic natural gas pricing assigned to the National Energy Board during 1975 with the enactment by Parliament of the Petroleum Administration Act (P.A.A.) were continued throughout 1976. Part III of the P.A.A. is concerned with domestic natural gas prices and provides authority for measures enabling the Government, as far as may be practicable, to achieve a uniform price, exclusive of transportation and service costs, for gas consumed in Canada outside the province of production, and to maintain a reasonable balance between the prices of alternative fuels in Canada. The Act is also intended to help achieve a balance between the interests of consumers and producers in Canada, while at the same time encouraging the development and production of natural gas.

The Act provides for the Minister to enter into an agreement with the government of a producer-province to establish mutually acceptable prices for natural gas from that province during an agreed period.

Such an agreement, between the federal government and the government of Alberta, was concluded in October, 1975 and subsequently amended in June, 1976 to be in effect for a further period of one year. The amended agreement provided for the pricing of natural gas sold in the domestic market from July 1, 1976 to December 31, 1976 and from January 1, 1977 to June 30, 1977 to be based upon a Toronto city-gate reference price of \$1.405 and \$1.505 per million British thermal units (MMBtu) respectively. A million British thermal units is approximately equivalent to one thousand cubic feet (Mcf) of natural gas. The reference prices of \$1.405 and \$1.505 are approximately 85 per cent of the Btu equivalent value of the crude oil price delivered at Toronto. All other prices for natural gas sold in interprovincial trade are derived from the reference price based on transportation tolls determined under Part IV of the NEB Act.

During 1976 the Board carried out its responsibility for administering the provisions of Part III of the Petroleum Administration Act with regard to the price of domestic gas. This responsibility involves the prohibition of the sale of gas outside its province of production unless the price paid is a price prescribed under the Regulations of the Act, the prohibition of the purchase or sale of gas within a producer-province destined for consumption outside of that province, or the movement of any gas outside its province of production unless the price paid is one approved by special or general orders of the Board. The orders relating to events in Alberta parallel those taken by the Government of Alberta under its own legislation, and reflect the cooperation required to implement the Federal/Alberta agreement. The improvement in the amount of gas available for sale and the reduction in the uncertainty related to contracting practices attest to the beneficial results flowing from the agreement.

Natural Gas Exports

Net exports of natural gas to the United States totalled 954 Bcf for the year 1976. This volume is slightly higher than the export volume during 1975.

In May of this year, the Board approved amendments to four existing licences which authorize exports by Canadian-Montana to the State of Montana. As a result, Canadian-Montana was allowed to export a total of 34.2 Bcf of gas in 1976-77, 5 Bcf less than was authorized the previous year. The net effect of these amendments was to allow Canadian-Montana to export an additional 5 Bcf of gas for one year which is to be charged against the total volume of gas pre-

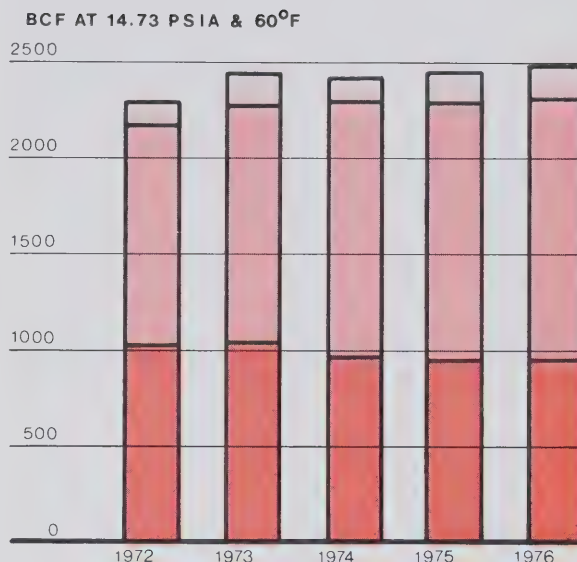
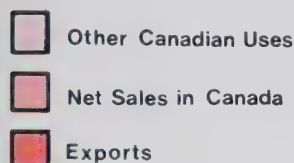
Figure 6: **NATURAL GAS PRODUCTION**

	1972	1973	1974	1975	1976(e)
Net Sales In Canada	1145.8	1229.4	1314.3	1324.7	1345.3
Other Canadian Use**	129.1	187.3	147.6	175.4	191.1
Exports	1009.7	1027.9	959.0	946.9	953.6
Total Production*	2284.6	2444.6	2420.9	2447.0	2490.0

*Marketable Pipeline Gas

**Includes Pipeline Fuel and Losses

(e) Estimated



viously authorized for these licences. This annual accelerated take, and the three previously authorized by the Board, were granted to help offset excessive disruptions in the short-term resulting from the expiration of licence GL-8 which expired in 1973 and to prevent the shutting-in of gas from the Pakowki Lake area. Supplies from this area are not readily available to Canadian markets unless new facilities are constructed. Therefore increased deliverability from this area shifts export deliveries from Cardston to Aden thereby making some of the gas otherwise exported at Cardston available for sale in Canada.

Natural Gas Export Price

It has been the Board's practice since 1974 to review annually the energy selling prices in export markets served by Canadian natural gas and to make recommendations thereon to the Government. This annual review is conducted pursuant to the Board's obligation under Section 11A of the National Energy Board Part VI Regulations, adopted in 1970, to maintain surveillance of natural gas export selling prices and report on them from time to time to the Governor in Council.

The Board completed its most recent examination of export market information in the spring of 1976, and recommended that the prices for natural gas being exported from Canada be increased to varying levels ranging from \$1.60 to \$2.10 per thousand cubic feet. These price recommendations were based mainly on estimated export market commodity values derived from surveys of competitive energy alternatives filed with the Board by the various licence holders in the market areas concerned, which extend from California to Vermont. They represent the Board's assessment of the appropriate export selling price for Canadian natural gas in each market area based on least cost alternatives, substitution value to Canadians of natural gas, and other factors, and are illustrative of the current commodity value in the various markets served at that time.

The Government, in considering the Board's recommendations, also considered views expressed by United States authorities. The United States Government, in the course of consultation, expressed a desire for a single uniform price at the international boundary. The Minister of Energy, Mines and Re-

sources acceded to this request and announced on June 10, 1976 that the export price of natural gas exported under all existing licences would be uniformly increased in two stages, to \$1.80 per Mcf, effective September 10, 1976 and, thereafter to \$1.94 per Mcf effective January 1, 1977. In announcing the export price increases, the Minister stated that it was still the objective to seek full value for the gas in each market area and indicated that as a result of the Government's gas pricing policy, there had been a striking increase in Canadian gas exploration and development activity which would enhance Canadian ability to continue to export gas.

Following representation made to the Minister, the Governor in Council, because of special hardship, agreed to hold the export price for one small licence, GL-29, at \$1.80 per Mcf, effective January 1, 1977.

Rates and Tariffs

A rate application by TransCanada PipeLines Limited was heard in the latter part of the year. In its decision the Board allowed an increase of 1.758¢/Mcf from the previous 43.650¢/Mcf for the average transportation charge from the Alberta border to eastern Ontario and Quebec to be effective January 1, 1977, and maintained TransCanada's allowable return on rate base at 10.2 per cent. The decision on TransCanada's rate application approved rates and tolls which were compatible with prices prescribed under the Petroleum Administration Act.

The Board also held the first public hearing of a rate application by ICG Transmission Limited. A decision is expected early in 1977.

Westcoast Transmission Company was requested to submit information by the end of the year as a basis for a public hearing into its rates, tolls and tariffs.

Gas Pipeline Construction

The most significant items were as follows: TransCanada Pipelines installed approximately 36 miles of new construction in eastern Canada and carried out 146 miles of upgrading and requalification of its pipeline system. TransCanada construction activity in western Canada consisted of the installation of new regenerators in three compressor stations.

Westcoast Transmission Company obtained Board approval and constructed 47.6 miles of pipeline in the Fort Nelson area and 25.8 miles in the Fort St.

John area. Other pipeline construction by this company was limited to expansions of the company's gathering systems and a submarine pipeline across the Fraser River at Agassiz, British Columbia.

Construction this year has generally been for the purpose of fuel saving, operational efficiency and line integrity rather than increased throughput. A principal reason for the decreased construction activity is the continuing tight supply situation in conventional supply areas.

Mackenzie Valley-Yukon Gas Pipeline Hearings

In October, 1975, a Board panel chaired by Marshall A. Crowe commenced the hearing of two applications by Canadian Arctic Gas Pipeline Limited and Foothills PipeLines Ltd. to construct a natural gas pipeline through the Mackenzie River valley in the Northwest Territories to connect with existing pipeline facilities in the Province of Alberta. In consequence of the decision of the Supreme Court of Canada in March, 1976, respecting Mr. Crowe's participation as a member of the hearing panel, the Board appointed a new panel to hear the Mackenzie Valley applications, with Mr. J. G. Stabback, as presiding member. The Board re-opened its hearing on the Mackenzie Valley applications in April, 1976.

In addition to the original applicants, a third application was included as of October 18, 1976. This alternative, known as the Foothills (Yukon) group project is made up of Foothills Pipeline (Yukon) Limited, Westcoast Transmission Company Limited, Alberta Gas Trunk Line (Canada) Limited and Alberta Gas Trunk Line. This application pertains to the transport of gas from Prudhoe Bay, Alaska, to continental USA by means of a combination of new and existing pipelines in Alaska and Canada. The Board has held sessions in the northern communities of Inuvik, Whitehorse and Yellowknife, as well as in Ottawa.

Further sessions with respect to the Foothills (Yukon) Group project route will be held in Whitehorse, Yukon, to allow the local interested parties to present their views and comments regarding the socio-economic and environmental impact of the proposed Foothills (Yukon) pipeline.

Export Control of Propane and Butanes

The amount of propane and butanes exported from Canada is regulated by the Board through a licensing and order system. No new long-term licences were issued in 1976. The quantities available for export under order are determined for each year (April to March) on the basis of estimated annual Canadian production less estimated Canadian requirements and previously licensed exports. Exports are authorized monthly or quarterly on the basis of the available supply in the period.

In 1976, 43,982 M barrels of propane and 26,254 M barrels of butanes were produced in Canada for distribution into the domestic and export markets; of this volume 85 per cent was produced from natural gas with the balance produced at refineries from crude oil.

Surplus production of liquified petroleum gas is normally stored in underground caverns to allow for variable seasonal demands. In 1976 the maximum underground inventories were 10.7 million barrels of specification propane and 2.6 million barrels of specification butanes. At December 31, 1976, the inventories were 7.6 million barrels of specification propane and 1.4 million barrels of specification butanes.

In 1976, exports of propane equalled 57 per cent of net production and exports of butanes 65 per cent of net production.

The minimum export price for these commodities is normally established monthly by the Board. In 1976 the minimum export price for propane ranged from 18 to 21 cents per gallon f.o.b. Alberta, and was 18 cents in December. For butanes the range was between 18 and 20 cents with the higher figure being the minimum export price in December.

Application to Export Ethylene

In May 1976, the Board held a public hearing on an application by Dow Chemical of Canada, Limited to export surplus ethylene to be produced at a plant proposed to be built near Red Deer, Alberta. The ethylene will be manufactured from a supply of ethane extracted from natural gas. Subsequently the Board authorized the export of up to 350 million pounds of ethylene in each year during a ten-year period commencing on January 1, 1978, and the export for re-

import into Canada at Windsor, Ontario, of up to 150 million pounds of ethylene in each year during a twenty-year period commencing on January 1, 1978.

Pipeline Incidents

The safety aspects of design, construction, operation and maintenance of pipelines are of continuing concern to the Board. All incidents are investigated to determine their causes and, where appropriate, remedial measures are instituted to prevent recurrence of similar failures in future. Pipeline incidents resulted in three fatalities during the year. A summary list of incidents which occurred in 1976 is presented in Appendix X.

The Board continued to deploy inspecting engineers in the field during pipeline construction operations, replacements of line of pipe and repairs to ensure that all requirements, as they relate to construction, environmental concerns and agriculture are being complied with. The Board gave special attention to investigations of the circumstances which resulted in the three fatalities in pipeline systems.

As a result of a study of oil pipeline leaks and breaks, the Board has decided to restrict the use of full encirclement clamping devices, and to specify the methods of supporting pipelines prior to backfilling.

The Board was made aware of doubts that the construction of TransCanada PipeLines' northern Ontario pipeline had been completed satisfactorily and that it was safe to operate. The Board conducted an investigation with its staff and other experts into the allegations that welding defects exist in the system as a result of the 1971 and 1972 construction. It was found that the pipeline was safe, and though some anomalies exist, these do not prejudicially affect the safety of this pipeline.

ELECTRICITY

Total Canadian consumption of electric energy in 1976 is estimated to have been 284,000 GWh (gigawatt-hours), about 7 per cent more than in 1975.

At the end of 1975, Canada's total net electrical generating capability was 57,933 MW (megawatts), of which hydroelectric plants accounted for 37,328 MW, conventional thermal stations 18,321 MW and nuclear power 2,284 MW. Planned additions in 1976 were 2,109 MW of hydro and 3,842 MW of conventional thermal, for a total planned increase of 10 per cent. Although no new nuclear capacity was planned for commercial service in 1976, the first 750 MW unit at the Bruce "A" nuclear generating station in Ontario was started up towards the end of the year.

Exports and Imports of Electricity

Electrical interconnections between Canada and the United States have existed since about 1900. At present there are some 65 international power lines, ranging in voltage from 120 volts to 500 kV, and a 765 kV circuit is to be constructed by 1978.

Major exports of electricity are made over transmission lines at voltages of 115 kV and above. There are some two dozen such circuits with a combined transfer capability of about 6,000 MW, extending from New Brunswick, Quebec, Ontario, Manitoba and British Columbia, to the U.S.

These international interconnections enable both Canadian and U.S. utilities to improve the economy of operation of their power systems, and to render and obtain assistance during emergencies. Although in recent years exports of electricity have far exceeded imports, the interconnections have enabled Canadian systems to purchase power from the United States on those occasions when they needed it. During the last quarter of 1976, for example, Manitoba Hydro imported energy to supplement its hydroelectric generation which had been reduced by low river flows. In December, 1976, Ontario Hydro, following unforeseen outages of several of its major generating units, bought power from utilities in the United States.

In addition to the major interconnections described above, there are a number of lower voltage lines

Figure 7: **ELECTRICITY SUPPLY**

	1972	1973	1974	1975 (p)	1976 (e)
Total Canadian Generation	240,213	263,334	280,256	272,624	293,411
Imports from United States	2,381	2,249	2,441	3,986	3,590
Total Supply	242,594	265,583	282,697	276,610	297,001

(p) preliminary

(e) estimate

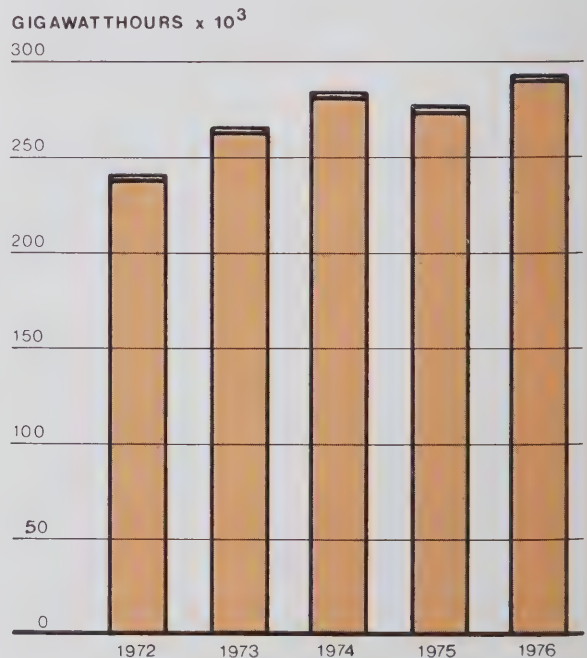
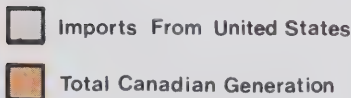
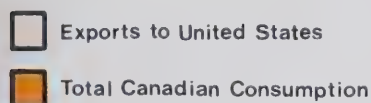


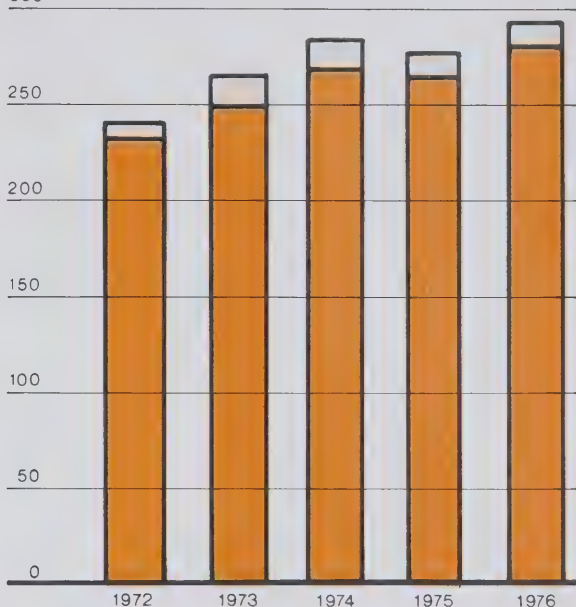
Figure 8: **ELECTRICITY DEMAND**

	1972	1973	1974	1975(p)	1976(e)
Total					
Canadian					
Consumption	231,557	249,298	267,298	265,234	284,197
Exports to					
United					
States	11,037	16,285	15,399	11,376	12,804
Total					
Demand	242,594	265,583	282,697	276,610	297,001

(p) preliminary
(e) estimate



GIGAWATTHOURS x 10³
300



crossing the international boundary. Both Canadian and United States utilities sell small amounts of electricity to customers just across the border, where such customers are remote from the power systems of their own country.

Gross exports of electricity in 1976 were 12,804 GWh (11,376 GWh in 1975) and imports were 3,590 GWh (3,986 GWh in 1975), resulting in estimated net exports of 9,214 GWh (7,390 GWh in 1975). These net exports constituted approximately 3 per cent of total Canadian generation and brought in net revenue of approximately \$167 million (\$102 million in 1975).

Returns submitted to the Board by the major exporting utilities showed that of the exports over the major system interconnections, 30 per cent of the energy sold came from surplus hydroelectricity, 43 per cent from imported coal, 12 per cent from imported oil, 3 per cent from Canadian fossil fuels and 12 per cent purchased from adjacent utilities. The Board exercises supervision not only over the quantities of energy exported but also over the prices. Many of the prices are subject to review annually and in

some cases the prices of individual short-term transactions between Canadian and United States utilities are subject to individual approval.

Interprovincial Transfers of Electricity

Although the Board does not exercise jurisdiction over interprovincial transfers of electricity, it encourages them by requiring that any surplus energy be offered to neighbouring Canadian utilities before being committed to markets in the United States.

By far the largest interprovincial transfer of electricity is the sale of power from the Churchill Falls development in Labrador to Hydro-Quebec under a contract which runs well into the next century. This interprovincial transfer amounts to some 4,800 MW, or approximately 30,000 GWh per year, and supplies more than a third of Hydro-Quebec's energy requirements.

Quebec has been selling substantial amounts of firm power to both New Brunswick and Ontario. Of several contracts with Ontario Hydro dating from

International and Interprovincial Transfers of Electricity for 1975

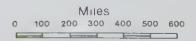


FIGURE 9



the late twenties, the last expired on November 1, 1976. An additional contract made in 1970 for the sale of firm power from Hydro-Quebec to Ontario Hydro is due to expire in 1977. Hydro-Quebec has let it be known that in future it will not sell power to neighbouring provinces, but only surplus interruptible energy if and when available. Because of good water conditions, however, storage reservoirs in Quebec are currently at high levels, and surpluses of energy are expected to exist for some time.

Manitoba Hydro supplies power under contract to the west system of Ontario Hydro, and also sells some power to Saskatchewan.

There are relatively minor interchanges of power between the Province of Alberta and the West Kootenay area of British Columbia.

Exact figures for interprovincial transfers of electric energy in 1976 are not yet available. Figure 9 shows international and interprovincial transfers for 1975.

Electrical Applications

During 1976 the Board held public hearings on four electrical applications. Two requested authority to build new international power lines and to make exports, one was for an amendment to a power line certificate and one was for export licences.

Manitoba Hydro applied for authority to build a 230 kV international power line approximately 100 miles long from Ridgeway Substation, northeast of Winnipeg, to the international border at a point near Sprague, Manitoba, and for authorization to export energy. The application was heard in Winnipeg in January and was approved conditionally inasmuch as the Board ordered a change in one portion of the international power line route proposed by Manitoba Hydro. The change increased the length of the line by about 2.5 miles but made use of an existing utility corridor. Licences were issued allowing a maximum total export of 3,000 GWh per year for six years.

Subsequently Manitoba Hydro applied for an amendment to the certificate for the 230 kV power line to allow a 13.5 mile section to be built on the route described in its original application rather than on the route approved by the Board. This application was heard in Winnipeg in September and was approved to enable Manitoba Hydro to meet its contractual

obligations to United States utilities and avoid substantial economic losses which would have been reflected, ultimately, in added cost to its Canadian customers.

Hydro-Quebec applied for authorization to construct a 765 kV international power line approximately 35 miles long from a proposed substation near Beauharnois, southwest of Montreal, to a point on the international boundary near Dundee, Quebec, and to export power over this line. The application was heard in Longueuil, Quebec in June and was approved. A licence was issued authorizing the export of 800 megawatts of seasonal diversity power together with associated energy of 2,140 Gwh during the months of June to October in 1977 and 3,000 Gwh per year from April to October in 1978 to 1981. After 1981 the licence provides eight annual periods during which the sale of energy will be subject to annual findings of surplus and approvals of price by the Board.

An application by Ontario Hydro to export surplus interruptible energy was heard in Ottawa in March and was approved. Most of the energy to be exported will be derived from coal imported from the United States. This application was significant for the detailed study provided by the applicant on the possible social costs of coal-fired generation. Export licences were issued for a period of five years.

The Board is empowered to authorize the export of small quantities of power by order, without a public hearing. During the year, fifteen such orders were issued covering small quantities of electricity. The Board also issued three emergency orders for the export of power by The Ontario-Minnesota Pulp and Paper Company Limited following the failure of transformers in the company's mill at Fort Frances, Ontario. The power covered by these emergency orders was exported to the United States at 120 kV, stepped down by transformers in the United States to 6.6 kV and returned to Canada at this voltage, thus avoiding a curtailment of the power supply to the Canadian mill.

The disposition of all power export applications dealt with during 1976 is summarized in Appendix XI. This Appendix also shows those licences which were amended for any reason during the year.

At the end of 1976 two power export applications were before the Board. Hydro-Quebec has applied

for licences to export power to three existing customers in Vermont. Manitoba Hydro has applied for authority to construct a 500 kV line to interconnect with Northern States Power Company in Minnesota and for licences to export power to several mid-western utilities. The Board expects to hear these applications in 1977.

Other Activities

In connection with the Board's Oil Supply and Requirements Hearing, the Electrical Engineering Branch prepared a forecast of the requirements of the Canadian electric utility industry for primary fuels during the period 1976 to 2000. A report is also nearing completion on the output, fuel consumption and operating characteristics of Canadian thermal generating stations for 1975; this report will show the historic trends of these data over the previous five years. The staff is also completing a report on the estimated capital costs of new thermal generating stations as at January 1, 1977. Some valuable computer programs were obtained from industry and others are being developed internally to support the activities of the Branch in providing

advice on the Canadian power supply and demand situation and on costs of facilities and production.

A member of the staff has been appointed to the Management Committee of the Tidal Power Review Board and to the chairmanship of the sub-committee responsible for activities relating to the Maritimes, Quebec and New England markets, including generation supply and transmission studies on the incorporation of tidal power.

FINANCIAL MATTERS

The Board continued to monitor and assess the financial and economic aspects of various applications for pipeline construction, energy exports and tariff determinations.

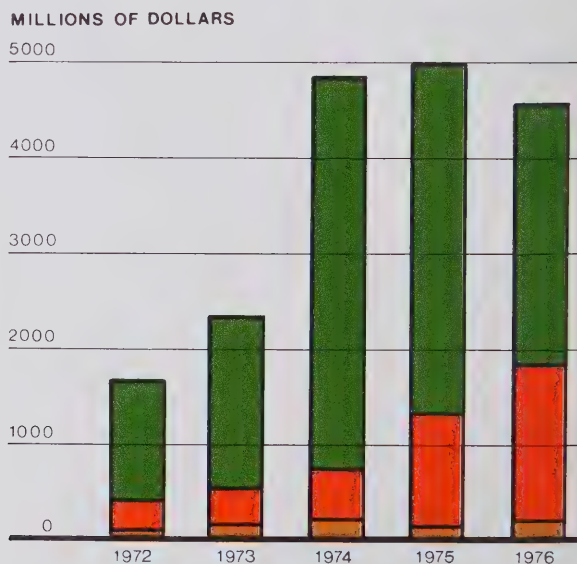
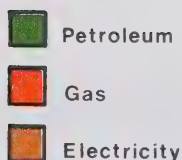
Due to an increase in the export price of natural gas during the year 1976, revenues increased approximately 40 per cent over the year 1975 to an estimated \$1,634.5 million.

Exports of crude oil and equivalent hydrocarbons and petroleum products in 1976 resulted in estimated

Figure 10: **DOLLAR VALUE OF EXPORTS OF OIL, GAS AND ELECTRICITY (GROSS)**

	1972	1973	1974	1975	1976 ^(e)
Petroleum	1235.3	1829.3	4134.2	3691.1	2708.6
Natural Gas	307.9	358.1	503.1	1166.3	1631.7
Electricity	70.1	115.1	169.3	104.9	173.8
Total	1613.3	2302.5	4806.6	4962.3	4514.1

(e) estimated



revenues of \$2,708.6 million compared to \$3,691.1 million in 1975, a percentage decrease of 26.6. This decrease is attributable to the lower export volumes for crude oil, equivalent hydrocarbon and petroleum products.

The Board continued to audit the amounts imposed, levied, collected and, where applicable, rebated or refunded, for oil and oil product export charges authorized under the regulations and provisions of the Petroleum Administration Act. During 1976, the Board collected and transmitted to the Receiver General approximately \$716.3 million. Audits were also conducted in 1976 on exporters of propane and butanes.

During the year, the Board conducted eight major field audits and reviewed a variety of reports on the accounting and financial activities of some 22 oil and gas pipeline companies under Board jurisdiction.

ENVIRONMENT

Protection of the environment is a major concern of the Board in considering applications for certificates, licences and orders. The applicants are required, pursuant to the Act, to submit an assessment of the probable environmental impact of proposed oil and gas pipelines and proposed international power lines, and the steps proposed to be taken to mitigate the effect on the environment.

The environmental information requirements for oil and gas pipelines and international power lines are set forth in the Rules of Practice and Procedure. To assist applicants in the preparation of environmental assessment reports on pipelines, a draft set of environmental information guidelines has been developed. They were circulated to industry and to relevant government departments for comment. The final form of these guidelines is expected to be completed in 1977. Equivalent guidelines relating to international power lines were issued in 1974.

The applications received in 1976 involved a variety of construction and operation activities, each with its unique impact upon the environment. Environmental aspects were assessed with respect to such activities as constructing new pipelines and new international power lines; looping of existing pipelines; pipeline replacement; increased operating pressure in pipelines; and generation of power for export.

Geographically, these applications ranged from Canada's Arctic to the urban zones of southern Canada, and involved such widely diverse environmental aspects as the stability of permafrost soils and the use of herbicides to control weeds. Measures to protect wildlife and fish as well as air and water quality are concerns that have to be evaluated.

Although most of the work involves assessment of applications, investigation of specific environmental complaints relating to pipeline construction or operation activities has also been undertaken. These complaints concerned the erosion and stability of banks at river crossings and noise at compressor or pumping stations. The advice of the Soil Research Institute of Agriculture, Canada, has been obtained with respect to the protection of the agricultural lands during and after construction of a new pipeline. Based upon the Institute's field work and recommendations, the Board issues guidelines

describing how soil damage can be minimized during the ditching operation of pipeline construction.

ORGANIZATION OF THE NATIONAL ENERGY BOARD

The Board is divided into eight separate branches, and the following is a brief outline of the responsibilities of these branches.

Administration and Personnel Branch

Provides administrative support to the Board, including such functions as personnel, financial and library services.

Economics Branch

Responsible for energy statistics including supply/demand balances for all sources of energy, short and long-term energy forecasts, analysis of market requirements in respect of applications, administration of the propane/butanes export allocation program and economic analysis of major energy projects and of the energy industries.

Electrical Engineering Branch

Advises the Board on all matters concerning electric power including regulatory operations associated with authorizing the construction of international power lines and with licensing exports of power; conducts studies on various aspects of the planning and engineering of electric power systems and power generation.

Engineering Branch

Advises the Board on matters of oil and gas exploration, drilling and production. Forecasts trends in oil and gas supply from conventional, oil sands, and synthetic sources. Independently calculates the reserves and deliverability of gas and the reserves and producibility of oil. Responsible for pipeline design, construction, operation, right of way and public safety. Carries out inspection, engineering and economic studies in relation to pipelines and associated facilities. Analyzes and makes recommendations on engineering aspects of construction of oil and gas pipelines and gas processing plants. Provides environmental advice and assessments respecting the construction and operation of pipelines and power lines and exportation of oil, gas and electric power and other related activities.

The Calgary office of the Engineering Branch is engaged in the actual pool by pool calculation of gas and oil reserves and the inspection of pipelines in western Canada which are under the Board's jurisdiction.

Financial Branch

Provides advice on rates and accounting matters in respect of regulatory and advisory functions. Analyzes and recommends on the financial aspects of construction of oil and gas pipelines, including financial and economic feasibility, methods of financing, financial structure of applicants and Canadian content of projects. Examines the rate structures including methods of rates, tolls and tariff designs of oil and natural gas pipelines and pricing aspects of oil, natural gas and electricity for export. Organizes and conducts field audits of pipeline companies and licensed exporters of oil and gas. Develops uniform accounting regulations for pipeline companies.

Law Branch

Advises the Board on its statutory powers, prepares regulations and rules of procedure, prepares draft amendments to the Act, examines witnesses at hearings, assists in the preparation and review of submissions to Governor in Council, Reasons for Decision, Orders and Certificates and conducts litigation for and on behalf of the Board.

Oil Policy Branch

Acts as the Board's principal staff source of information and advice on national and international matters affecting oil policy. Provides the staff advice and appraisals for the Board's control over licensed exports and export prices of crude oil and equivalent hydrocarbons and petroleum products.

Natural Gas

The various responsibilities of the Board in respect of natural gas are carried out in several Branches of the Board. They are coordinated by a Senior Adviser who in turn reports to the Director General, Operations.

BOARD MEMBERS

M. A. Crowe	Chairman
J. G. Stabback	Vice-Chairman
C. G. Edge	Associate Vice-Chairman
R. F. Brooks	Member
A. Cossette Trudel	Member
J. Farmer	Member
W. A. Scotland	Member
R. A. Stead	Member

Secretary's Office

B. H. Whittle	Secretary
Ann Sicotte	Information Officer
G. G. Michaud	Chief, Secretariat

Directors General

A. B. Gilmour	Director General, Operations
J. R. Jenkins	Director General, Planning
M. E. LeClerc	Director General, Special Projects

Administration and Personnel Branch

T. L. Clairmont	Director
L. Labrecque	Acting Chief, Personnel
R. J. McElroy	Chief, Financial and Administrative Services
Dorothy A. Knowles	Chief Librarian

Economics Branch

P. Eglinton	Director
P. L. Fournier	Assistant Director, Regulatory
A. L. Kosegi	Assistant Director, Applied Research
G. H. Shaw	Assistant Director, Policy Analysis and Forecasts

Electrical Engineering Branch

E. S. Bell	Director
A. N. Karas	Assistant Director, Planning
G. Yorke Slader	Assistant Director, Operations

Engineering Branch

J. Labuda	Acting Director
W. Rutherford	Senior Adviser
S. K. Krishnaswami	Assistant Director, Environment
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Natural Gas

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APPENDIX I

New Certificates of Public Convenience and Necessity Pursuant to Section 44 Issued During 1976

Oil Pipelines

Applicant	Facilities	Location	Estimated Cost	Heard	Issued	Cert. No.
1. Manito Pipelines Ltd.	A (i) Approximately 89.3 miles of existing 10.750-inch diameter pipeline.	Province of Saskatchewan	*	Ottawa 4 August 1976	3 December 1976	OC-31
	(ii) Approximately 89.3 miles of existing 4.500-inch diameter pipeline.	"				
	(iii) Approximately 10.6 miles of existing 6.625-inch diameter pipeline.	"				
	(iv) Approximately 10.6 miles of existing 4.500-inch diameter pipeline.	"				
	(v) associated existing pumping and storage facilities.	"				
	B (i) Approximately 13.7 miles of 10.750-inch diameter pipeline.	Provinces of Saskatchewan and Alberta				
	(ii) Approximately 13.7 miles of 4.500-inch diameter pipeline.	"				
	(iii) Pump Station and other works connected.	Province of Alberta				

*These pipeline facilities are owned by Murphy Oil Company Ltd. and Canadian Reserve Oil and Gas Ltd. — Total Capital Investment \$7,489,000. However, this pipeline system is operated by Manito Pipelines Ltd.

International Power Line

1. The Manitoba Hydro-Electric Board	One international power line to be designated the Ridgeway-Shannon line and to extend approximately 103 miles from Ridgeway substation to a point on the international boundary near Sprague in the Province of Manitoba. This single-circuit line would be built for 230 kV three-phase operation using conductors no smaller than 954,000 circular mil ACSR.	\$6,544,000	13-17 Jan. 1976 20-24 Jan. 1976	3 Mar. 1976	EC-III-14
2. Quebec Hydro-Electric Commission	One international power line to be designated the Chateauguay-Massena line and to extend approximately 35 miles from Chateauguay Substation, near Beauharnois, to a point on the international boundary, three miles east of Dundee in the Province of Quebec. This single-circuit line would be built for 765 kV three-phase operation, each phase consisting of four conductors no smaller than 1,354,800 circular mil ACSR.	\$48,721,000	1-4 June 1976 7-11 June 1976 14-16 June 1976 28-29 June 1976	5 Nov. 1976	EC-III-15

APPENDIX II

Exemption Orders Pursuant to Section 49 Issued During 1976 Class "B" Construction

(This is construction which at the discretion of the Board may be the subject of a specific exemption order pursuant to Section 49.)

Natural Gas Pipelines

1. Westcoast Transmission Company Limited, approximately 8.6 miles of 6.625-inch diameter line of pipe and works connected therewith, known as 'Cache Creek Pipeline', in the Province of British Columbia. Estimated Cost \$1,094,000. Order No. XG-1-76, dated 15 January, 1976, as amended.
2. TransCanada PipeLines Limited, additional pipeline, being a Purchase Meter Station, known as 'Liebenthal Purchase Meter Station', and works connected therewith, in the Province of Saskatchewan. Estimated Cost \$104,500. Order No. XG-2-76, dated 10 June, 1976, as amended.
3. ICG Transmission Limited, additional pipeline, being a Meter Station, referred to as 'Barwick Meter Station' and works connected therewith, in the Province of Ontario. Estimated Cost \$2,000. Order No. XG-3-76, dated 15 July, 1976.
4. ICG Transmission Limited, additional pipeline, being a replacement of an existing Meter Station, referred to as 'Barwick Meter Station' and works connected therewith in the Province of Ontario. Estimated Cost \$13,000. Order No. XG-4-76, dated 15 July, 1976.
5. ICG Transmission Limited, additional pipeline, being a new Meter Station, known as 'Manitou Meter Station', and works connected therewith, in the Province of Ontario. Estimated Cost \$10,200. Order No. XG-5-76, dated 19 August, 1976.
6. Westcoast Transmission Company Limited, approximately 10.6 miles of 16-inch diameter line of pipe known as 'Oak-Rigel Pipeline', and additional compression facilities at its existing 'Taylor Booster Station No. 1', in the Province of British Columbia. Estimated Cost \$6,361,700. Order No. XG-6-76, dated 9 September, 1976.
7. TransCanada PipeLines Limited, approximately 2,000 feet of 12-inch diameter line of pipe and works connected therewith, designated 'Sault Ste Marie Security Loop', in the Province of Ontario. Estimated Cost \$793,500. Order No. XG-7-76, dated 2 December, 1976.
8. TransCanada PipeLines Limited, approximately 3,871 feet of 8-inch diameter line of pipe and works connected therewith, known as 'Richelieu River Valve Relocation', in the Province of Quebec. Estimated Cost \$311,900. Order No. XG-8-76, dated 2 December, 1976.
9. Westcoast Transmission Company Limited, approximately 19.5 miles of 12.750-inch diameter line of pipe and works connected therewith, known as 'Aitken Creek Pipeline', and a new compressor station, known as 'Booster Station No. 15 (Aitken Creek)', in the Province of British Columbia. Estimated Cost \$8,072,000. Order No. XG-9-76, dated 16 December, 1976.
10. TransCanada PipeLines Limited, additional pipeline being a Meter Station, known as 'Sheridan-Union Meter Station', in the Province of Ontario. Estimated Cost \$40,000. Order No. XG-10-76, dated 23 December, 1976.

APPENDIX II (CONT'D)

Exemption Orders Pursuant to Section 49 Issued During 1976 Class "B" Construction

Oil Pipelines

1. Trans-Northern Pipe Line Company, approximately 13.4 miles of 12-inch diameter line of pipe, reactivation of existing 'Bowmanville Pump Station' including installation of two 450 diesel engine-driven pumping units and works connected therewith; reconstruction of 'Kilbirnie Pump Station' including two 600 horsepower electric motor-driven centrifugal pumping units and works connected; modifications to 'Oakville Pump and Meter Station' including two 1600 horsepower electric motor-driven centrifugal pumping units and works connected, all in the Province of Ontario. Estimated Cost \$2,450,000. Order No. XO-1-76, dated 19 August, 1976.
2. Interprovincial Pipe Line Limited, additional pipeline being two 2500 horsepower electric pumping units, one each at Milden and Craik, in the Province of Saskatchewan. Estimated Cost \$1,000,000. Order No. XO-2-76, dated 7 October, 1976.
3. Murphy Oil Company Ltd., approximately 13.7 miles of 10.750-inch diameter line of pipe and 13.7 miles of 4.500-inch diameter line of pipe, a new pump station and terminal, known as 'Blackfoot Pump Station and Terminal', including one 100 horsepower electric motor-driven positive displacement pumping unit, two 1,000 barrel storage tanks and one local automatic custody transfer unit, in the Provinces of Alberta and Saskatchewan, Estimated Cost \$1,161,400. Order No. XO-3-76, dated 3 December, 1976. (See also CPCN No. OC-31/APPENDIX I).
4. Trans-Northern Pipe Line Company, additional pipeline at three locations, Toronto area, in the Province of Ontario. Estimated cost \$133,000. Order No. XO-4-76, dated 16 December, 1976.
5. TransCanada PipeLines Limited, for certain modifications to be made to its pipeline in the Provinces of Manitoba and Ontario. Estimated Cost \$4,208,611. Order No. XGM-5-76, dated 30 December, 1976, (for 1977 construction).

APPENDIX II (CONT'D)

Exemption Orders Pursuant to Section 49 Issued During 1976 Class "C" Construction

Natural Gas Pipelines

1. Alberta Natural Gas Company Ltd, for certain facilities to be added to its pipeline in the Provinces of Alberta and British Columbia. Estimated Cost \$199,297.50. Order No. XGM-1-76, dated 15 April, 1976.
2. TransCanada Pipelines Limited, for certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Quebec. Estimated Cost \$38,369,735. Order No. XGM-2-76, dated 10 June, 1976.
3. Westcoast Transmission Company Limited, for certain facilities to be added to its pipeline in the Provinces of Alberta and British Columbia, and in the Yukon and North West Territories. Estimated Cost \$5,418,862. Order No. XGM-3-76, dated 10 June, 1976.
4. Consolidated Pipe Lines Company, for certain facilities to be added to its pipeline in the Province of Saskatchewan. Estimated Cost \$11,000. Order No. XGM-4-76, dated 29 July, 1976.
4. Yukon Pipelines Limited, for certain facilities to be added to its pipeline in the Province of British Columbia and in the Yukon Territory. Estimated Cost \$27,500. Order No. XOM-4-76, dated 15 April, 1976.
5. Interprovincial Pipe Line Limited, for certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Quebec. Estimated Cost \$1,532,200. Order No. XOM-5-76, dated 15 April, 1976.
6. Westspur Pipe Line Company, for certain facilities to be added to its pipeline in the Provinces of Saskatchewan, and Manitoba. Estimated Cost \$88,000. Order No. XOM-6-76, dated 3 June, 1976.
7. Trans-Northern Pipe Line Company, for certain facilities to be added to its pipeline in the Provinces of Quebec and Ontario. Estimated Cost \$485,000. Order No. XOM-7-76, dated 10 June, 1976, as amended.
8. Trans Mountain Pipe Line Company Ltd., for certain facilities to be added to its pipeline in the Provinces of Alberta and British Columbia. Estimated Cost \$1,040,370. Order No. XOM-8-76, dated 10 June, 1976.

Oil Pipelines

1. Wascana Pipe Line Ltd., for certain facilities to be added to its pipeline in the Province of Saskatchewan. Estimated Cost \$10,300. Order No. XOM-1-76, dated 4 March, 1976.
2. Montreal Pipe Line Company Limited, for certain facilities to be added to its pipeline in the Province of Quebec. Estimated Cost \$30,950. Order No. XOM-2-76, dated 11 March, 1976.
3. Sun Pipe Line Company, for certain facilities to be added to its pipeline in the Province of Ontario. Estimated Cost \$130,000. Order No. XOM-3-76, dated 8 April, 1976.
9. Cochin Pipe Lines Ltd., for certain facilities to be added to its pipeline in the Provinces of Saskatchewan and Ontario. Estimated Cost \$5,000. Order No. XOM-9-76, dated 8 July, 1976.
10. Dome NGL Pipeline Ltd., for certain facilities to be added to its pipeline in the Province of Ontario. Estimated Cost \$292,900. Order No. XOM-10-76, dated 8 July, 1976.
11. Dome Kerrobert Pipeline Ltd. and Pan-Canadian Kerrobert Pipeline Ltd., for certain facilities to be added to its pipeline in the Provinces of Alberta and Saskatchewan. Estimated Cost \$156,750. Order No. XOM-11-76, dated 8 July, 1976.
12. Petroleum Transmission Company, for certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan and Manitoba. Estimated Cost \$15,000. Order No. XOM-12-76, dated 15 July, 1976.

APPENDIX II (CONT'D)

New Certificates of Public Convenience and Necessity Issued during 1976, Pursuant to Subsection 31 (1) of an Act to Amend the National Energy Board Act, Chapter 27, Revised Statutes of Canada, 1970

Applicant	Facilities	Issued	Certificate No.
<i>International Power Lines</i>			
1. Lac La Croix Power Authority	One international power line which extends approximately 14 miles from the Lac La Croix Indian Settlement in the Province of Ontario to a point on the international boundary on the southern end of 'Sand Point Lake' in the District of Rainy River, in the Province of Ontario. This single-phase line operates at 14,400 volts and consists partly of two cables for underwater crossing and partly of overhead lines.	29 Nov. 1977	EC-55

Amending Orders to Certificates of Public Convenience and Necessity Issued Pursuant to Subsection 17 (2) during 1976

Applicant	Facilities	Issued	Order No.
<i>International Power Lines</i>			
1. Manitoba Hydro Electric Board	Amending order to Certificate EC-III-14 to provide a change in the longitude from 90 degrees, 30 min., 27 sec. to 95 degrees, 30 min., 27 sec.	6 May 1976	AO-1-EC-III-14
2. Manitoba Hydro Electric Board	Amending order to Certificate EC-III-14 striking out subcondition 3 (b) and condition 4 and changing the total length of the line from 103 miles to 100.8 miles.	27 Sep. 1976	AO-1-EC-III-14

APPENDIX II (CONT'D)

Exemption Orders Issued Pursuant to Sections 40, 41 and 43 during 1976

International Power Lines

1. Canadian Sandpoint Power Association

One international power line which extends from the distribution point of Canadian Sandpoint Power Association in the Province of Ontario to a point on the international boundary line within 'Sand Point Lake', approximately one mile south of Harrison Narrows, in the District of Rainy River, in the Province of Ontario. This single-phase line operates at 14,400 volts.

Order No. XE-1-76

15 July 1976

2. Canadian Sandpoint Power Association

One international power line which extends from the distribution point of Canadian Sandpoint Power Association in the Province of Ontario to a point on the international boundary line within 'Sand Point Lake' at Harrison Narrows in the District of Rainy River, in the Province of Ontario. This single-phase line operates at 14,400 volts.

Order No. XE-2-76

15 July 1976

APPENDIX III

New Licences and Orders to Export Natural Gas, Propane, Ethane, and Ethylene Issued during 1976

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		
			From	To	Maximum
<i>A. Licences – Natural Gas Export – Section 82</i>					
None Issued					
<i>B. Licences – Propane Export – Section 82</i>					
None Issued					
<i>C. Licences – Ethane Export – Section 82</i>					
None Issued					
<i>D. Orders – Ethane Export – Part VI Regulations – Section 6B</i>					
1. Dome Petroleum Limited	GO-1-76	Windsor, Ont ^(a)	1/1/78	31/12/85	25,000 Barrels per year
(a) The Licensee may export under this order only those quantities of ethane which are imported and shall import the same quantity of ethane so exported.					
<i>E. Orders – Ethylene Export – Part VI Regulations – Section 16.1</i>					
1. Dow Chemical of Canada Limited	EYL-1-76	Elmore, Sask.	1/1/78	31/12/97	350,000,000 lbs per year.
2. Dow Chemical of Canada Limited	EYL-2-76	Windsor, Ont ^(a)	1/1/78	31/12/97	150,000,000 lbs. per year.
(a) This licence authorizes an export at Elmore, Ontario, and such ethylene exported under this Order shall be imported into Canada at Windsor, Ontario .					
Applicant	Order Number	Date of Issue	Comments		
<i>F. Orders Amending Existing Natural Gas Export Licences – Section 17</i>					
1. TransCanada PipeLines Limited	AO-8-GL-1	22/ 6/76	(i) Amendment establishing that the prices to be received by the Licensee on and after the Sept. 10, 1976, and on and after January 1, 1977, shall not be greater and less than those specified.		
2. Alberta and Southern Gas Co. Ltd.	AO-8-GL-3	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.		
3. Westcoast Transmission Company Limited	AO-9-GL-4	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.		
4. Canadian-Montana PipeLine Company	AO-8-GL-5	11/ 5/76	(i) Amendment providing that gas may be exported at a point near Aden, Alberta, in addition to the existing point of export near Cardston, Alberta, providing that the combined volumes exported do not exceed previously agreed to volumes under existing specified licences.		
5. Canadian-Montana PipeLine Company	AO-9-GL-5	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.		

APPENDIX III (CONT'D)

New Licences and Orders to Export Natural Gas, Propane, Ethane, and Ethylene Issued during 1976

Applicant	Order Number	Date of Issue	Comments
6. Niagara Gas Transmission Limited	AO-14-GL-6	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
7. Niagara Gas Transmission Limited	AO-15-GL-6	21/10/76	(i) Amendment altering the price to be received for "Peaking Service Contract" gas sold in accordance with a new formula.
8. Alberta & Southern Gas Co. Ltd.	AO-6-GL-16	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
9. Canadian-Montana PipeLine Company	AO-6-GL-17	11/ 5/76	(i) Amendment providing that gas may be exported at a point near Aden, Alberta, in addition to the existing point of export near Cardston, Alberta, providing that the combined volumes exported do not exceed previously agreed to volumes under existing specified licences.
10. Canadian-Montana PipeLine Company	AO-7-GL-17	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
11. TransCanada PipeLines Limited	AO-10-GL-18	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
12. TransCanada PipeLines Limited	AO-9-GL-19	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
13. TransCanada PipeLines Limited	AO-14-GL-20	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
14. Alberta & Southern Gas Co. Ltd.	AO-8-GL-24	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
15. Canadian-Montana PipeLine Co.	AO-10-GL-25	11/ 5/76	(i) Amendment providing for an additional specified quantity of gas to be exported at Aden, Alta. during a specified period. (ii) Amendment providing that gas may be exported at a point near Aden, Alberta, in addition to the existing point of export near Cardston, Alberta, providing that the combined volumes exported do not exceed previously agreed to volumes under existing specified licences.
16. Canadian-Montana PipeLine Co.	AO-11-GL-25	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
17. ICG Transmission Limited	AO-8-GL-28	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
18. ICG Transmission Limited	AO-9-GL-29	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
19. Alberta & Southern Gas Co. Ltd.	AO-5-GL-35	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.

APPENDIX III (CONT'D)

New Licences and Orders to Export Natural Gas, Propane, Ethane, and Ethylene Issued during 1976

Applicant	Order Number	Date of Issue	Comments
20. Canadian-Montana PipeLine Co.	AO-5-GL-36	11/ 5/76	(i) Amendment providing that gas may be exported at a point near Aden, Alberta, in addition to the existing point of export near Cardston, Alberta, providing that the combined volumes exported do not exceed previously agreed to volumes under existing specified licences.
21. Canadian-Montana PipeLine Co.	AO-6-GL-36	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
22. TransCanada PipeLines Limited	AO-8-GL-37	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
23. TransCanada PipeLines Limited	AO-6-GL-38	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
24. TransCanada PipeLines Limited	AO-6-GL-39	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
25. Westcoast Transmission Company Limited	AO-11-GL-41	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.
26. Westcoast Transmission Company Limited	AO-12-GL-41	18/11/76	(i) Amendment establishing a new price formula below which "Pan-Alberta Gas" exported by the Licensee may not be sold or delivered on and after October 1, 1976 and on and after January 1, 1977.
27. Westcoast Transmission Company	AO-13-GL-41	21/10/76	(i) Amendment extending the period during which gas may be delivered at Kingsgate, B.C.
28. TransCanada PipeLines Limited	AO-7-GL-43	22/ 6/76	(i) Amendment establishing new prices below which gas exported may not be sold or delivered on and after September 10, 1976, and on and after January 1, 1977.

G. Orders Amending Propane Export Licences — Section 17

Nil Issued

H. Orders Amending Ethane Export Licences — Section 17

1. Dome Petroleum Limited	AO-2-GL-47	29/ 4/76	(i) Amendment deferring the commencement of the licence and export of annual quantities to be made thereunder up to two years and two months.
2. Dome Petroleum Limited	AO-3-GL-47	18/11/76	(i) Amendment permitting the Licensee to import into Canada and subsequently to export from Canada all at Windsor, Ont., those quantities of ethane which are exported at Elmore, Saskatchewan.

I. Orders — Natural Gas Export — Part VI Regulations — Section 18

None Issued

J. Amending Orders — Natural Gas Export — Part VI Regulations — Section 18

None Issued

K. Orders — Natural Gas Export — Part VI Regulations — Section 6B

None Issued

APPENDIX IV

Current Licences and Orders to Export Natural Gas, Propane, Ethane, and Ethylene as at 31 December 1976

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum		
			From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)
A. Natural Gas							
1. TransCanada PipeLines Limited	GL-1(AO-8)	Emerson, Man.	11/4/60	14/5/81	223,000	74,000	1,410,000
2. Alberta & Southern Gas Co. Ltd.	GL-3(AO-8)	Kingsgate, B.C.	31/10/61	31/10/86	458,750	153,270	3,826,000
3. Westcoast Transmission Company Limited	GL-4(AO-9)	Kingsgate, B.C.	10/12/61	10/12/81	152,000	51,000	1,020,000
4. Canadian-Montana Pipe Line Company	GL-5(AO-9)	Cardston & Aden, Alta. ^(a)	31/10/61	31/10/86	36,000	10,950	273,750
5. Niagara Gas Transmis- sion Limited	GL-6(AO-15)	Cornwall, Ont.	7/9/62	30/6/87	23,000 ^(b)	5,520 ^(b)	121,190
6. Alberta & Southern Gas Co. Ltd.	GL-16(AO-6)	Kingsgate, B.C.	1/11/66 1/11/67	31/10/67 31/10/89	113,125 226,250	37,415 74,830	1,614,000
7. Canadian-Montana Pipe Line Company	GL-17(AO-7)	Cardston & Aden, Alta. ^(a)	1/11/66 1/11/67	31/10/67 31/10/89	12,000 24,000	3,650 7,300	164,250
8. TransCanada PipeLines Limited	GL-18(AO-10)	Emerson, Man.	22/11/65 1/11/66	31/10/68 31/10/89	25,000 143,000	8,000 52,300	1,200,000
9. TransCanada PipeLines Limited	GL-19(AO-9)	Philipsburg, Que.	1/11/65	31/10/89	20,700 ^(d)	6,500	108,000
10. TransCanada PipeLines Limited	GL-20(AO-14)	Emerson, Man.	21/11/68	31/10/91	87,600	32,100	765,000
11. TransCanada PipeLines Limited	GL-21(AO-5) ^(e)	Emerson, Man.	5/11/68	31/10/91	N/S	247,782	6,000,000
12. Alberta & Southern Gas Co. Ltd.	GL-24(AO-8)	Kingsgate, B.C.	1/11/68 1/11/69 1/11/91	31/10/69 31/10/91 31/10/93	121,000 236,000 135,400	38,900 77,900 44,600	1,841,900
13. Canadian-Montana Pipe Line Company	GL-25(AO-11)	Cardston & Aden, Alta. ^(a)	1/11/68 1/11/69 1/11/91	31/10/69 31/10/91 31/10/93	12,000 24,000 13,800	3,650 7,300 4,200	172,650
		Aden, Alta.	27/3/73 ^(f)	14/5/74	99,460	19,892	
			14/5/74 ^(g)	14/5/75	99,460	19,892	
			14/5/75	14/5/76	99,460	10,000	
			14/5/76	14/5/77	49,730	5,000	

APPENDIX IV (CONT'D)

Current Licences and Orders to Export Natural Gas, Propane, Ethane, and Ethylene as at 31 December 1976

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum		
			From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)
14. ICG Transmission Limited	GL-28(AO-8)	Sprague, Man.	1/11/70	31/10/95	2,834	337	8,084
15. ICG Transmission Limited	GL-29(AO-9)	Fort Frances, Ont.	1/11/70	31/10/95	32,323	7,715	192,820
16. ICG Transmission Limited	GL-30(AO-2) ^(h)	Sprague, Man.	1/11/70 9/ 1/73	31/10/95 31/12/73	46,662 10,296	12,144 N/S	299,990 305
17. Alberta & Southern Gas Co. Ltd.	GL-35(AO-5)	Kingsgate, B.C.	1/11/70	31/10/85	205,000	67,500	1,012,500
18. Canadian-Montana Pipe Line Company	GL-36(AO-6)	Cardston & Aden, Alta. ^(a)	1/11/70	31/10/85	12,000	3,650	54,750
19. TransCanada PipeLines Limited	GL-37(AO-8)	Emerson, Man.	1/11/70	31/10/90	195,800	71,663	1,433,256
20. TransCanada PipeLines Limited	GL-38(AO-6)	Emerson, Man.	1/11/70	31/10/90	50,000	18,300	366,000
21. TransCanada PipeLines Limited	GL-39(AO-6)	Emerson, Man.	1/11/70	31/10/90	7,200	2,635	52,704
22. Westcoast Transmission Company Limited	GL-41(AO-13)	Huntingdon, B.C. ⁽ⁱ⁾	1/11/71 1/11/72	31/10/72 31/10/89	733,338 809,200	254,982 281,359	5,042,860
23. TransCanada PipeLines Limited	GL-42(AO-1) ^(e)	Emerson, Man.	15/ 4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	
24. TransCanada PipeLines Limited	GL-43(AO-7)	Emerson, Man.	1/11/71	31/10/91	N/S	17,000	340,000
25. Consolidated Natural Gas Limited	GL-44 ^(j)	Emerson, Man.	15/ 3/72	31/10/92	150,000	45,000	669,000
26. Canadian Lowell Gas Limited	GL-48 ^(k)	Niagara Falls, Ont.	10/ 4/75	31/ 3/88	12,500	1,500 ^(l)	N/S
27. Western Decalta Petroleum Limited	MO-49-75	Coutts, Alta.	13/ 9/75	30/ 6/82	(m)	5	N/S

N/S Not specified

(a) Notwithstanding the Cardston, Alta. export point, the Licensee may export gas at a place near Aden, Alta, (i) as long as this change does not affect the total quantity of gas authorized for export under this licence and (ii) as long as the combined volumes under certain existing licences do not exceed specified quantities to be exported at Aden.

(b) There was an exception for the period 23/12/70 to 31/12/71 when exports of 30,000 Mcf daily and 6,700 Mcf were authorized.

(c) Interruptible.

(d) The Licensee shall not export more than 17,700 Mcf in any one day until all Canadian requirements for contracted gas deliveries, including peak load requirements are met.

(e) This licence authorizes an export near Emerson, Man. for re-import near Sault Ste. Marie and Sarnia, Ont., to serve the Eastern Canadian market.

(f) This export actually commenced on the day when the total quantity of gas authorized by Licence No. GL-8 was exported (approximately June 1973).

(g) This amendment stipulated a maximum daily quantity of 27,000 Mcf or 450,000 Mcf in any calendar month during the period between May 14, 1974, and the commencement of export authorized for the period May 14, 1974, to May 14, 1975.

(h) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ont.

(i) Notwithstanding the Huntingdon, B.C. export point, the Licensee may export gas at a place near Kingsgate, B.C. during the period from Nov. 1, 1973, to Oct. 31, 1977.

- (j) This licence authorizes an export near Emerson, Manitoba. The quantity of gas exported under the authority of this licence shall be equal to the quantities of gas which the Licensee imports pursuant to Licence No. GLI-5.
- (k) This licence authorizes the exportation of the same quantities of gas which were imported for the purpose of its storage under the authority of Licence No. GLI-6 and its subsequent amendments, in particular MO-11-76.
- (l) This quantity (in any one year) is to be exported during the consecutive five-month period commencing on the 1st day of November (in any one year) and ending on the 31st day of March in the next following year.
- (m) The quantity of gas that may be exported in any one month shall not be more than 1,000,000 cubic feet.

APPENDIX IV (CONT'D)

Current Licences to Export Natural Gas, Propane, Ethane, and Ethylene as at 31 December 1976

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes	
			From	To	Column A (Annual Barrels)	Column B (Annual Barrels)
B. Propane						
1. Dome Petroleum Limited	GL-31 (AO-4) ^(a)	Gretna, Man., Elmore, Sask., Sarnia, Ont. and Windsor, Ont.	5/6/73 ^(b)	31/12/73	6,287,500	5,827,500
			1/1/74	31/12/74	5,991,500	5,481,500
			1/1/75	31/12/75	5,913,000	5,338,000
			1/1/76	31/12/76	5,751,500	5,121,500
			1/1/77	31/12/77	5,582,500	4,887,500
			1/1/78	31/12/78	5,457,000	839,500
			1/1/79	31/12/79	5,357,000	839,500
			1/1/80	31/12/80	5,263,000	839,500
			1/1/81	31/12/81	5,114,000	839,500
			1/1/82	31/12/82	4,948,500	839,500
			1/1/83	31/12/83	4,665,500	839,500
			1/1/84	31/12/84	4,316,500	839,500
			1/1/85	31/12/85	3,898,000	839,500
			1/1/86	31/12/86	3,362,000	839,500
			1/1/87	21/12/87	2,930,500	906,000
			1/1/88	31/12/88	2,489,000	1,216,000
			1/1/89	31/12/89	2,078,000	1,241,000
			1/1/90	31/12/90	1,690,000	1,065,000
			1/1/91	31/12/91	1,396,000	1,045,000
			2. Amoco Canada Petroleum Company Ltd.	GL-32 (AO-2) ^(c)	Gretna, Man., Sarnia, Ont., and Windsor, Ont.	1/1/92	31/12/92	1,339,500	1,040,000
1/1/93	31/12/93	1,233,500				1,025,000
1/1/94	31/12/94	1,011,000				655,000
1/1/95	31/12/95	294,000				0
5/6/73 ^(d)	31/12/73	3,872,500				3,589,500
1/1/74	31/12/74	3,579,000				3,274,000
1/1/75	31/12/75	3,533,000				3,189,000
1/1/76	31/12/76	3,421,500				3,046,500
1/1/77	31/12/77	3,287,000				2,878,000
1/1/78	31/12/78	3,197,500				584,000
1/1/79	31/12/79	3,133,500				584,000
1/1/80	31/12/80	3,077,000				584,000
1/1/81	31/12/81	2,987,500				584,000
1/1/82	31/12/82	2,943,500				584,000
1/1/83	31/12/83	2,832,500				584,000
1/1/84	31/12/84	2,610,000				584,000
1/1/85	31/12/85	2,401,500				584,000
1/1/86	31/12/86	2,182,500				584,000
1/1/87	31/12/87	2,024,000				584,000
1/1/88	31/12/88	1,838,000				584,000
1/1/89	31/12/89	1,690,000	584,000			
1/1/90	31/12/90	1,546,000	584,000			
1/1/91	31/12/91	1,396,000	584,000			
1/1/92	31/12/92	1,339,500	584,000			
1/1/93	31/12/93	1,233,500	584,000			
1/1/94	31/12/94	1,011,000	486,400			
1/1/95	31/12/95	294,000	0			

APPENDIX IV (CONT'D)

Current Licences to Export Natural Gas, Propane, Ethane, and Ethylene as at 31 December 1976

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes	
			From	To	Column A (Annual Barrels)	Column B (Annual Barrels)
3. PanCanadian Gas Products Ltd.	GL-34 (AO-3) (e)	Gretna, Man., Sarnia or Windsor, Ont.	5/6/73 ^(f)	31/12/73	2,415,000	2,238,000
			1/1/74	31/12/74	2,412,500	2,207,500
			1/1/75	31/12/75	2,380,000	2,149,000
			1/1/76	31/12/76	2,330,000	2,075,000
			1/1/77	31/12/77	2,295,500	2,009,500
			1/1/78	31/12/78	2,259,500	401,500
			1/1/79	31/12/79	2,223,500	401,500
			1/1/80	31/12/80	2,186,000	401,500
			1/1/81	31/12/81	2,126,500	401,500
			1/1/82	31/12/82	2,005,000	401,500
			1/1/83	31/12/83	1,833,000	401,500
			1/1/84	31/12/84	1,706,500	401,500
			1/1/85	31/12/85	1,476,500	401,500
			1/1/86	31/12/86	1,179,500	335,000
			1/1/87	31/12/87	906,500	25,000
			1/1/88	31/12/88	651,000	0
			1/1/89	31/12/89	388,000	0
			1/1/90	31/12/90	144,000	0
4. Dome Petroleum Limited	GL-46 (AO-2) (g)	Windsor, Ont. Sarnia, Ont.		1/4/74	31/3/75	1,930,000
				1/4/75	31/3/76	2,560,000
				1/4/76	31/3/77	2,990,000
				1/4/77	31/3/78	3,930,000
				1/4/78	31/3/79	3,900,000
				1/4/79	31/3/80	3,790,000
				1/4/80	31/3/81	3,450,000
				1/4/81	31/3/82	2,950,000
				1/4/82	31/3/83	2,400,000
				1/4/83	31/3/84	2,100,000

(a) This licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-26 with Licence No. GL-31 whereby certain quantities of the propane exported near Gretna, Manitoba and Elmore, Saskatchewan is imported into and exported from Canada near Sarnia and Windsor, Ontario. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import that volume of propane authorized for export during that period as provided by the licence. The Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.

(b) This period includes the volumes of propane exported and imported pursuant to Licences GL-26 and GL-31 during the part of 1973 prior to the day of issue of this order.

(c) This Licence authorized additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-27 with Licence No. GL-32. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.

(d) This period includes the volumes of propane exported and imported pursuant to Licences GL-27 and GL-32 during the part of 1973 prior to the day of the issue of this order.

(e) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.

(f) This period includes the volumes of propane exported and imported pursuant to Licences GL-33 and GL-34 during the part of 1973 prior to the day of the issue of this order.

(g) This is an import-export licence whereby no propane may be exported at Windsor, Ontario, that has not been imported at Sarnia, Ontario. Notwithstanding the above export or import points, the Licensee may export propane at Sarnia, Ontario, and import propane at Windsor, Ontario, during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.

APPENDIX IV (CONT'D)

Current Licences and Orders to Export Natural Gas, Propane, Ethane, and Ethylene as at 31 December 1976

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Export Volumes
			From	To	(Barrels)
C. Ethane					
1. Dome Petroleum Limited	GL-45 (AO-2)(a)	Windsor, Ont.	1/ 4/74	31/ 3/75	1,830,000
			1/ 4/75	31/ 3/76	1,830,000
			1/ 4/76	31/ 3/77	1,830,000
			1/ 4/77	31/ 3/78	1,940,000
			1/ 4/78	31/ 3/79	1,970,000
			1/ 4/79	31/ 3/80	2,010,000
			1/ 4/80	31/ 3/81	2,080,000
			1/ 4/81	31/ 3/82	2,190,000
			1/ 4/82	31/ 3/83	2,230,000
			1/ 4/83	31/ 3/84	2,090,000
2. Dome Petroleum Limited	GL-47 (AO-3)	Elmore, Sask.	1/11/76(b)	31/12/76	(b)
			1/ 1/77	31/12/77	14,000,000
			1/ 1/78	31/12/78	13,900,000
			1/ 1/79	31/12/79	13,000,000
			1/ 1/80	31/12/80	9,900,000
			1/ 1/81	31/12/81	8,900,000
			1/ 1/82	31/12/82	7,500,000
3. Dome Petroleum Limited	GO-1-76	Elmore, Sask. (c)	1/ 1/83	31/12/83	2,900,000
			1/ 1/78	31/12/85	25,000
					Barrels per year

(a) This licence authorizes an export near Windsor, Ontario. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Sarnia, Ontario. Notwithstanding the above export and import points, the licensee may export ethane at Sarnia, Ontario, and import ethane at Windsor, Ontario during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.

(b) This licence provides for two commencement dates, namely, the first delivery of ethane into Cochin Pipelines Ltd. or November 1, 1976, whichever is earlier. The quantity of ethane that may be exported in the period in 1976 ending on December 31, 1976, shall not exceed that quantity which is the same percentage of 14,100,000 barrels, that the number of days between the date of commencement of the licence term and December 31, 1976 is to 365 days.

(c) The Licensee may export under this order only those quantities of ethane which are to be imported and shall import the same quantity of ethane so exported.

D. Ethylene

1. Dow Chemical of Canada Limited	EYL-1-76	Elmore, Sask.	1/ 1/78	31/12/97	350,000,000 lbs./yr.
2. Dow Chemical of Canada Limited	EYL-2-76	Elmore, Sask. (a)	1/ 1/78	31/12/97	150,000,000 lbs./yr.

(a) This licence authorizes an export at Elmore, Ontario and such ethylene exported under this Order shall be imported into Canada at Windsor, Ontario.

APPENDIX V

Exports of Natural Gas

Exporter and Licence/Order	Maximum			(MMcf)					Cumulative to 31/12/76	Total Authorized Exports	Remaining(a) Under Licences	
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/71	1972	1973	1974	1975	1976				
A. Natural Gas												
1. TransCanada PipeLines Limited GL-1 (AO-8)	223,000	74,000	786,164	73,904	73,687	74,390	73,487	74,102	1,155,734	1,410,000	254,265	
2. TransCanada PipeLines Limited GL-2 (AO-7)	96,900(b)	20,663(b)	58,743	3,672	—	—	—	—	62,415	N/S	N/A	
3. Alberta & Southern Gas Co. Ltd. GL-3 (AO-8)(c)	458,750	153,270	1,534,901	167,436	157,353	138,837	151,464	158,273	2,308,264	3,826,000	1,517,736	
4. Westcoast Transmission Company Limited GL-4 (AO-9)	152,000	51,000	452,989	50,945	50,144	46,196	48,324	46,465	695,063	1,020,000	324,937	
5. Canadian-Montana Pipe Line Company GL-5 (AO-9)(c)	36,000(d)	10,950(d)	109,609	12,068	11,525	11,032	10,777	10,885	165,896	273,750	107,854	
6. Niagara Gas Transmission Limited GL-6 (AO-15)	23,000(e)	5,520(e)	35,727	5,899	5,546	5,556	5,497	5,537	63,762	121,190	57,428	
7. Canadian-Montana Pipe Line Company GL-8 (AO-1)	99,460	19,892	195,775	16,391	7,834	—	—	—	22,000	220,000	N/A	
8. Alberta & Southern Gas Co. Ltd. GL-16 (AO-6)(c)	113,125 226,250	37,415 74,830	319,499	74,459	77,730	74,162	76,984	78,606	701,440	1,614,000	912,560	
9. Canadian-Montana Pipe Line Company GL-17 (AO-7)(c)	12,000(d) 24,000	3,650(d) 7,300	32,737	8,054	7,674	7,355	7,185	7,256	70,261	164,250	93,989	
10. TransCanada PipeLines Limited GL-18 (AO-10)	25,000 143,000	8,000 52,300	189,607	42,578	42,615	42,779	42,182	42,578	402,339	1,200,000	797,661	
11. TransCanada PipeLines Limited GL-19 (AO-9)	17,700	6,500	9,782	3,745	3,912	4,891	4,124	4,099	30,553	108,000	77,447	
12. TransCanada PipeLines Limited GL-20 (AO-14)	87,600	32,100	88,450	31,768	31,974	31,974	31,974	32,072	248,212	765,000	516,788	
13. TransCanada PipeLines Limited GL-21 (AO-5)(g)	N/S	247,782	632,212	221,055	227,879	214,189	210,268	218,505	1,724,108	6,000,000	4,275,892	

APPENDIX V (CONT'D) Exports of Natural Gas

Exporter and Licence/Order	Maximum		(MMcf)					Cumulative to 31/12/76	Total Authorized Exports	Remaining (a) Under Licences
	Daily (Mcf)	Annual (MMcf)	1972	1973	1974	1975	1976			
14. TransCanada PipeLines Limited GL-22 (AO-4)	N/S	N/S	2,592	—	—	—	—	2,592	3,000	N/A
15. Westcoast Transmission Company Limited PC1955-958 (AO-2) (h)	N/S	N/S	1,356,151	—	—	—	—	{ 1,356,151	N/A	N/A
23/06/55 — 31/12/65	303,450	N/S	—	—	—	—	—	—	N/A	N/A
01/01/66 — 02/10/77										
16. Westcoast Transmission Company Limited GL-23 (AO-7) (h)	101,150	36,920	257,112	—	—	—	—	{ 257,112	1,514,720	N/A
01/11/66 — 31/10/67	101,150	24,579	—	—	—	—	—	—	—	—
01/11/67 — 21/02/68	202,300	74,040	—	—	—	—	—	—	—	—
22/02/68 — 31/10/88										
17. Alberta & Southern Gas Co. Ltd. GL-24 (AO-8) (c)	121,000	38,900	163,264	83,474	83,076	84,889	86,036	{ 570,814	1,841,900	1,271,086
01/11/68 — 31/10/69	236,000	77,900	70,075	83,474	83,076	84,889	86,036	{ 570,814	1,841,900	1,271,086
01/11/69 — 31/10/91	135,400	44,600	—	—	—	—	—	—	—	—
01/11/91 — 31/10/93										
18. Canadian-Montana PipeLine Company GL-25 (AO-11) (c)	12,000(d)	3,650(d)	18,051	19,190	26,047	20,626	13,864	{ 105,832	172,650	66,818
01/11/68 — 31/10/69	24,000	7,300	8,054	19,190	26,047	20,626	13,864	{ 105,832	172,650	66,818
01/11/69 — 31/10/91	13,800	4,200	—	—	—	—	—	—	—	—
01/11/91 — 31/10/93	99,460	19,892	—	—	—	—	—	—	—	—
26/06/73 — 14/05/75	99,460	10,000	—	—	—	—	—	—	—	—
15/05/75 — 14/05/76	99,460	5,000	—	—	—	—	—	—	—	—
15/05/76 — 14/05/77	49,730	—	—	—	—	—	—	—	—	—
19. ICG Transmission Limited GL-28 (AO-8)	2,834	337	15	248	325	390	365	1,478	8,084	6,606
20. ICG Transmission Limited GL-29 (AO-9) (c)	32,323	7,715	7,109	7,650	7,448	6,816	7,338	44,388	192,820	148,432
21. ICG Transmission Limited GL-30 (AO-2) (i)	46,662	12,144	9,145	10,286	11,114	9,654	10,605	62,304	299,990	237,686
22. Alberta & Southern Gas Co. Ltd. GL-35 (AO-5)	205,000	67,500	71,155	68,804	61,652	66,896	69,548	409,975	1,012,500	602,525
23. Canadian-Montana PipeLine Company GL-36 (AO-4)	12,000(d)	3,650(d)	3,686	3,842	3,677	3,592	3,628	22,448	54,750	32,303

APPENDIX V (CONT'D)

Exports of Natural Gas

Exporter and Licence/Order	Maximum		(MMcft)										Cumulative to 31/12/76	Total Authorized Exports	Remaining (a) Under Licences
	Daily (Mcft)	Annual (MMcft)	Cumulative to 31/12/71	1972	1973	1974	1975	1976							
24. TransCanada PipeLines Limited GL-37 (AO-8)	195,800	71,663	80,099	72,143	71,467	71,467	71,467	71,686	438,329	1,433,356	995,027				
25. TransCanada PipeLines Limited GL-38 (AO-6)	50,000	18,300	20,582	18,300	18,250	18,250	18,250	18,300	111,932	366,000	254,068				
26. TransCanada PipeLines Limited GL-39 (AO-6)	7,200	2,635	3,011	2,635	2,630	2,628	2,628	2,635	16,167	52,704	36,137				
27. Westcoast Transmission Company Limited GL-40 (AO-1)(h)	75,863	27,770	2,560	--	--	--	--	--	2,560	554,200	N/A				
28. Westcoast Transmission Company Limited GL-41 (AO-13)(h) 01/11/71 - 31/10/72 01/11/72 - 31/10/89	733,338 809,200	254,982 281,359	43,422	255,496	267,753	240,462	214,119	214,590	{ 1,235,842	5,042,860	3,807,018				
29. TransCanada PipeLines Limited GL-42 (AO-1)(g) 15/04/71 - 31/10/71 01/11/71 - 31/10/94	N/S N/S	8,218 92,218	{ 17,697	82,271	84,811	79,716	78,256	81,322	{ 424,073	2,129,232	1,705,159				
30. TransCanada PipeLines Limited GL-43 (AO-6)	N/S	17,000	347	7,536	13,914	6,838	5,200	5,772	39,607	340,000	300,393				
31. Consolidated Natural Gas Limited GL-44(i)	150,000	45,000	--	2,669	28,336	19,503	15,725	14,252	80,485	669,000	588,515				
32. Patrick T. Buckley GO-1-68(k)	1,000	5	22	--	--	--	--	--	22	N/S	N/A				
33. Union Gas Company of Canada Limited EO-2-63	N/S	N/S	55	--	--	--	--	--	55	200	N/A				
34. TransCanada PipeLines Limited EO-1-70	N/S	N/S	25	--	--	--	--	--	25	40	N/A				
35. TransCanada PipeLines Limited EO-6-70	N/S	N/S	124	--	--	--	--	--	124	125	N/A				
36. TransCanada PipeLines Limited EO-2-72	N/S	N/A	--	120	--	--	--	--	120	N/S	N/A				
37. TransCanada PipeLines Limited EO-5-72	40,000	N/S	--	21	--	--	--	--	21	40	N/A				
38. Gaz Métropolitain, inc. EO-2-70 (AO-1)	N/A	N/A	151	--	--	--	--	--	151	N/A	N/A				
39. Gaz Métropolitain, inc. EO-3-70 (AO-1)	N/A	N/A	108	--	--	--	--	--	108	N/A	N/A				
40. Gaz Métropolitain, inc. EO-5-70 (AO-1)	N/A	N/A	614	--	--	--	--	--	614	N/A	N/A				
41. Gaz Métropolitain, inc. EO-8-70	N/A	N/A	150	--	--	--	--	--	150	N/A	N/A				

APPENDIX V (CONT'D) Exports of Natural Gas

Exporter and Licence/Order	Maximum (MMcft)										Total Authorized Exports	Remaining(a) under Licences
	Daily (Mcf)	Annual (MMcft)	Cumulative to 31/12/71	1972	1973	1974	1975	1976	Cumulative to 31/12/76			
42. Gaz Métropolitain, inc. EO-2-71	N/A	N/A	491	-	-	-	-	-	491	N/A	N/A	
43. Gaz Métropolitain, inc. EO-3-71	N/A	N/A	537	-	-	-	-	-	537	N/A	N/A	
44. Gaz Métropolitain, inc. EO-4-71	N/A	N/A	84	-	-	-	-	-	84	N/A	N/A	
45. Gaz Métropolitain, inc. EO-7-72	N/A	N/A	-	247	-	-	-	-	247	N/A	N/A	
46. Gaz Métropolitain, inc. EO-1-73	N/A	N/A	-	-	10	-	-	-	10	N/A	N/A	
47. Gaz Métropolitain, inc. GO-2-73	N/A	N/A	-	-	708	-	-	-	708	N/A	N/A	
48. TransCanada PipeLines Limited EO-1-74(l)	150	N/A	-	-	-	79	-	-	79	N/A	N/A	
49. TransCanada PipeLines Limited EO-2-74(l)	N/S	N/A	-	-	-	67	-	-	67	N/A	N/A	
50. TransCanada PipeLines Limited EO-1-75(l)	N/A	N/A	-	-	-	-	210	-	210	480	N/A	
51. TransCanada PipeLines Limited EO-2-75(l)	N/A	N/A	-	-	-	-	2	-	2	40	N/A	
Gross Exports			6,504,554	1,327,146	1,379,246	1,283,710	1,260,986	1,278,319	13,033,961			
Deduct Re-Export of Imports:												
Item 31, GL-44(l)			-	2,669	28,336	19,503	15,725	14,252	80,485			
Item 48, EO-1-74(l)			-	-	-	79	-	-	79			
Item 49, EO-2-74(l)			-	-	-	67	-	-	67			
Item 50, EO-1-75(l)			-	-	-	-	210	-	210			
Item 51, EO-2-75(l)			-	-	-	-	2	-	2			
Deduct Exports for Re-Import:												
Item 13, GL-21(g)			632,212	221,055	227,879	214,189	210,268	218,505	1,724,108			
Item 21, GL-30(l)			9,145	11,500	10,286	11,114	9,654	10,605	62,304			
Item 29, GL-42(g)			17,697	82,271	84,811	79,716	78,256	81,322	424,073			
Net Exports			5,845,500	1,009,651	1,027,934	959,042	946,871	953,635	10,742,633			

- (a) It may not be possible to export total volumes remaining under licences due to restrictions on peak day and annual volumes.
- (b) This licence authorizes an export of 30,000 MMcf in the period 01/11/70 to 31/03/72 and an additional export of 15,000 MMcf on an interruptible basis in the year commencing 1 November 1970.
- (c) Volumes exported licensed annual amounts due to make-up of accumulated shortfalls from previous years as authorized by licence.
- (d) Licences GL-5, GL-17, GL-25 and GL-36 must not exceed a combined export total at Aden of 99,460 MMcf per day or 19,892,000 MMcf in any consecutive 12-month period.
- (e) This licence authorizes daily and annual exports of 30,000 Mcf and 6,700 MMcf respectively during the period 23/12/70 to 31/12/71.
- (f) Licence GL-15
- (g) This licence authorizes an export at Emerson, Manitoba for re-import at Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.
- (h) On the day that first delivery of gas was made under licence GL-41, licences PC1955-958, GL-23 and GL-40 were revoked.
- (i) This is an export at Sprague, Manitoba for re-import at Rainy River, Ontario.
- (j) This licence authorizes the export at Emerson, Manitoba of those volumes imported into Canada pursuant to licence GL-1-5.
- (k) Formerly licence GL-7
- (l) This licence authorizes re-export of imports at Niagara Falls, Ontario on an emergency basis.
- (m) Not coded
- (n) Not coded
- (o) Amounts not to be exceeded

APPENDIX VI

New Licences and Orders to Import Natural Gas, Propane, Ethane and Ethylene issued during 1976

Applicant	Order Number	Date of Issue	Comments
<i>A. Licences — Natural Gas Import — Section 82</i>			
None Issued			
<i>B. Licences — Propane Import — Section 82</i>			
None Issued			
<i>C. Licences — Ethane Import — Section 82</i>			
None Issued			
<i>D. Orders Amending Existing Natural Gas Import Licences — Part VI Regulations — Section 17</i>			
None Issued			
<i>E. Orders Amending Existing Propane Import Licences — Part VI Regulations — Section 17</i>			
None Issued			
<i>F. Orders — Natural Gas Import — Part VI Regulations — Section 17</i>			
None Issued			
<i>G. Orders, Amending Existing Natural Gas Import Orders — Part VI Regulations — Section 17</i>			
1. Canadian Lowell Gas Limited	MO-11-76	18/3/76	(i) Amendment extending for two years the date, on or before which the Licensee shall file with the Board all the requisite authorizations of the Federal Power Commission in accordance to condition 8(1) of Licence GLI-6 and condition 6(1) of Licence GL-48.

Importer	Order Number	Point of Import	Term of Licence or Order		
			From	To	Maximum
H. Orders — Ethane Import — Part VI Regulations — Section 6B					
1. Dome Petroleum Limited	GO-1-76	Windsor, Ont ^(a)	1/1/78	31/12/85	25,000 Barrels per year
(a) The Licensee may export under this order only those quantities of ethane which are to be imported and shall import the same quantity of ethane so exported.					
I. Orders — Ethylene Import — Part VI Regulations — Section 16.1					
1. Dow Chemical of Canada Limited	EYL-2-76	Windsor, Ont ^(a)	1/1/78	31/12/97	150,000,000 lbs. per year
(a) This Licence authorizes an export at Elmore, Ontario and such ethylene exported under this Order shall be imported into Canada at Windsor, Ontario.					

APPENDIX VII

Current Licences and Orders to Import Natural Gas, Propane, Ethane and Ethylene as at 31 December 1976

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Import Volumes		
			From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)
A. Natural Gas							
1. Union Gas Company of Canada Limited	GL1-1	Ojibway, Ont.	1/2/65	5/11/76	55,000	15,500	170,000
2. Border Utilities Limited	GO-2-66(AO-1)	Coutts, Alta.	2/6/66	14/9/85	1,000	N/S	N/S
3. Canadian Western Natural Gas Company Limited	GO-6-66(AO-1)	Coutts, Alta.	22/9/66	14/9/85	1,000	N/S	N/S
4. TransCanada Pipe Lines Limited	GL-21(AO-5) ^(a)	(Sault Ste. Marie, and Sarnia, Ont.)	5/11/68	31/10/91	N/S	247,782	6,000,000
5. ICG Transmission Limited	GL-30(AO-2) ^(b)	Rainy River, Ont.	1/11/70	31/10/95	46,662	12,144	299,990
6. TransCanada Pipe Lines Limited	GL-42(AO-1) ^(a)	(Sault Ste. Marie, and Sarnia, Ont.)	15/4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	2,129,232
7. Consolidated Natural Gas Limited	GLI-5(AO-1)	N/S	15/3/72	31/10/92	150,000	45,000	
8. Canadian Lowell Gas Limited	GLI-6	Niagara Falls, Ont.	10/4/75 ^(d)	31/10/87	12,500	1,500 ^(c)	N/S

(a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(b) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(c) This quantity (in any one year) is to be imported during the consecutive seven-month period, commencing on the 1st day of April and ending on the 31st day of October in any period.

(d) An order MO-31-75 was issued June 25, 1975, fixing the 31st day of March 1976, as the day on or before which the licensee shall file with the Board all the requisite authorizations of the U.S. Federal Power Commission. A subsequent Order No. MO-11-76 was issued, dated Feb. 11, 1976, extending for two years this date to March 31, 1978.

N/S Not specified.

APPENDIX VII (CONT'D)

Current Licences and Orders to Import Natural Gas, Propane, Ethane and Ethylene as at 31 December 1976

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Annual Volumes	
			From	To	Column A (Bbls.)	Column B (Bbls.)
B. Propane						
1. Dome Petroleum Limited	GL-31(AO-4)(a)	Sarnia, Ont.	5/6/73(b)	31/12/73	6,287,500	5,827,500
			1/1/74	31/12/74	5,991,500	5,481,500
			1/1/75	31/12/75	5,913,000	5,338,000
			1/1/76	31/12/76	5,751,500	5,121,500
			1/1/77	31/12/77	5,582,500	4,887,500
			1/1/78	31/12/78	5,457,000	4,692,000
			1/1/79	31/12/79	5,357,000	4,517,000
			1/1/80	31/12/80	5,263,000	4,338,000
			1/1/81	31/12/81	5,114,000	4,134,000
			1/1/82	31/12/82	4,949,000	3,909,000
			1/1/83	31/12/83	4,665,500	839,500
			1/1/84	31/12/84	4,316,500	839,500
			1/1/85	31/12/85	3,898,000	839,500
			1/1/86	31/12/86	3,362,000	839,500
			1/1/87	31/12/87	2,930,500	906,000
			1/1/88	31/12/88	2,489,000	1,216,000
			1/1/89	31/12/89	2,078,000	1,241,000
			1/1/90	31/12/90	1,690,000	1,065,000
			1/1/91	31/12/91	1,396,000	1,045,000
			1/1/92	31/12/92	1,339,500	1,040,000
			1/1/93	31/12/93	1,233,500	1,025,000
			1/1/94	31/12/94	1,011,000	655,000
			1/1/95	31/12/95	294,000	0
2. Amoco Canada Petroleum Company Ltd.	GL-32(AO-2)(c)	Sarnia, Ont.	5/6/73(d)	31/12/73	3,872,500	3,589,500
			1/1/74	31/12/74	3,579,000	3,274,000
			1/1/75	31/12/75	3,533,000	3,189,000
			1/1/76	31/12/76	3,421,500	3,046,500
			1/1/77	31/12/77	3,287,000	2,878,000
			1/1/78	31/12/78	3,197,500	584,000
			1/1/79	31/12/79	3,133,500	584,000
			1/1/80	31/12/80	3,077,000	584,000
			1/1/81	31/12/81	2,987,500	584,000
			1/1/82	31/12/82	2,943,500	584,000
			1/1/83	31/12/83	2,832,500	584,000
			1/1/84	31/12/84	2,610,000	584,000
			1/1/85	31/12/85	2,401,500	584,000
			1/1/86	31/12/86	2,182,500	584,000
			1/1/87	31/12/87	2,024,000	584,000
			1/1/88	31/12/88	1,838,000	584,000
			1/1/89	31/12/89	1,690,000	584,000
			1/1/90	31/12/90	1,546,000	584,000
			1/1/91	31/12/91	1,396,000	584,000
			1/1/92	31/12/92	1,339,500	584,000
			1/1/93	31/12/93	1,233,500	584,000
			1/1/94	31/12/94	1,011,000	486,400
			1/1/95	31/12/95	294,000	0
3. Pan Canadian Gas Products Ltd.	GL-34(AO-3)(e)	Sarnia, Ont.	5/6/73(f)	31/12/73	2,415,000	2,238,000
			1/1/74	31/12/74	2,412,500	2,207,500
			1/1/75	31/12/75	2,380,000	2,149,000
			1/1/76	31/12/76	2,330,000	2,075,000
			1/1/77	31/12/77	2,295,500	2,009,500
			1/1/78	31/12/78	2,259,500	401,500
			1/1/79	31/12/79	2,223,500	401,500
			1/1/80	31/12/80	2,186,000	401,500
			1/1/81	31/12/81	2,126,500	401,500
			1/1/82	31/12/82	2,005,000	401,500
			1/1/83	31/12/83	1,833,000	401,500
			1/1/84	31/12/84	1,706,500	401,500
			1/1/85	31/12/85	1,496,500	401,500
			1/1/86	31/12/86	1,179,500	335,000
			1/1/87	31/12/87	906,500	25,000
			1/1/88	31/12/88	651,000	0
			1/1/89	31/12/89	388,000	0
			1/1/90	31/12/90	144,000	0

APPENDIX VII (CONT'D)

Current Licences and Orders to Import Natural Gas, Propane, Ethane and Ethylene as at 31 December 1976

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Volume
			From	To	Barrels
4. Dome Petroleum Limited	GL-46(AO-2)(g)	Sarnia, Ont.	1/4/74	31/3/75	1,930,000
			1/4/75	31/3/76	2,560,000
			1/4/76	31/3/77	2,990,000
			1/4/77	31/3/78	3,930,000
			1/4/78	31/3/79	3,900,000
			1/4/79	31/3/80	3,790,000
			1/4/80	31/3/81	3,450,000
			1/4/81	31/3/82	2,950,000
			1/4/82	31/3/83	2,400,000
			1/4/83	31/3/84	2,100,000

(a) This licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under licence No. GL-26 with Licence No. GL-31 whereby certain quantities of the propane exported near Gretna, Manitoba and Elmore, Saskatchewan is imported into and exported from Canada near Sarnia and Windsor, Ontario. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import that volume of such propane exported during that period as provided by the Licence. The Licensee shall import all such propane exported which is excess of the volumes stipulated in Column B.

(b) This period includes the volumes of propane exported and imported pursuant to Licences GL-26 and GL-31 during the part of 1973 prior to the date of issue of this order.

(c) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under licence No. GL-27 with Licence No. GL-32. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.

(d) This period includes the volumes of propane exported and imported pursuant to Licences GL-27 and GL-32 during the part of 1973 prior to the day of the issue of this order.

(e) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof such propane exported during that period provided the licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.

(f) This period includes the volumes of propane exported and imported pursuant to Licences GL-33 and GL-34 during the part of 1973 prior to the day of the issue of this order.

(g) This is an import-export licence whereby no propane may be exported at Windsor, Ontario, that has not been imported at Sarnia, Ontario. Notwithstanding the above export and import points, the Licensee may export propane at Sarnia, Ontario, and import propane at Windsor, Ontario, during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.

C. Ethane

1. Dome Petroleum Limited	GL-45(AO-2)(a)	Sarnia, Ont.	1/4/74	31/3/75	1,830,000
			1/4/75	31/3/76	1,830,000
			1/4/76	31/3/77	1,830,000
			1/4/77	31/3/78	1,940,000
			1/4/78	31/3/79	1,970,000
			1/4/79	31/3/80	2,010,000
			1/4/80	31/3/81	2,080,000
			1/4/81	31/3/82	2,190,000
			1/4/82	31/3/83	2,230,000
			1/4/83	31/3/84	2,090,000
2. Dome Petroleum Limited	GO-1-76	Elmore, Sask.(b)	1/1/78	31/12/85	25,000
					Barrels per yr.

(a) This licence authorizes an import near Sarnia, Ontario. The quantity of ethane imported under the authority of this licence shall be equal to the quantities of ethane which the licensee exports near Windsor, Ontario. Notwithstanding the export and import points specified in Licence GL-45, the Licensee may export ethane at Sarnia, Ontario, and import ethane at Windsor, Ontario during a specified period terminating the day that leave to open the pipeline authorized under certificate is granted by the Board.

(b) The Licensee may export under this order only those quantities of ethane which are to be imported and shall import the same quantity of ethane so exported.

D. Ethylene

1. Dow Chemical of Canada Limited	EYL-2-76	Elmore, Sask.(a)	1/1/78	31/12/97	150,000,000 lbs./yr.
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(a) This licence authorizes an export at Elmore, Sask. and such ethylene exported under this Order shall be imported into Canada at Windsor, Ontario.

APPENDIX VIII

Imports of Natural Gas

Importer and Licence/Order	Maximum			(MMcf)					Cumulative to 31/12/76	Total Authorized Imports	Remaining(a) Under Licences
	Daily (Mcf)	Annual (MMcf)	Cumulative To 31/12/71	1972	1973	1974	1975	1976			
A. Natural											
1. Coutts Gas Company Limited PC1955-1742	N/S	120	797	—	—	—	—	—	797	2,340	N/A
2. Border Utilities Ltd. GO-2-66 (AO-1)	1,000	N/S	199	39	32	30	35	29	364	N/S	N/A
3. Canadian Western Natural Gas Company Ltd. GO-6-66 (AO-1)	1,000	N/S	434	87	55	1	31	16	624	N/S	N/A
4. Union Gas Company of Canada Limited PC1956-1848	N/S	5,500	72,563	—	—	—	—	—	72,563	N/S	N/A
5. Union Gas Company of Canada Limited GLI-1	55,000	15,500	82,311	15,426	14,736	13,231	10,153	4,007	139,864	167,042(b)	N/A
6. TransCanada PipeLine Limited GLI-2 (AO-2)	N/S	25,500	77,166	—	—	—	—	—	77,166	86,500	N/A
01/11/65 — 01/11/66	N/S	30,400									
01/11/66 — 01/11/67	N/S	15,300									
01/11/67 — 01/11/68	N/S	10,200									
01/11/68 — 01/11/69	N/S	5,100									
01/11/69 — 01/11/70	N/S										
7. Tecumseh Gas Storage Limited GLI-3	20,000	3,000	5,896	—	—	—	—	—	5,896	5,896(b)	
8. TransCanada PipeLines Limited GLI-4 (AO-6)	N/S	N/S	79,029	—	—	—	—	—	79,029	82,303	N/A
9. Consolidated Natural Gas Limited GLI-5 (AO-1)(c)	150,000	45,000	—	2,669	28,604	19,663	15,769	14,654	81,359	669,000	587,641
10. TransCanada PipeLines Limited GL-21 (AO-5)(d)	N/S	247,782	631,883	220,480	228,608	214,392	209,337	218,505	1,723,205	6,000,000	4,276,795
11. ICG Transmission Limited GL-30 (AO-2)(e)	46,662	12,144	9,145	11,500	10,286	11,114	9,654	10,605	62,304	299,990	237,686

APPENDIX VIII (CONT'D)

Imports of Natural Gas

Importer and Licence/ Order	Maximum		(MMcft)					Cumulative to 31/12/76	Total Authorized Imports	Remaining(a) Under Licences
	Daily (Mcf)	Annual (MMcft)	1972	1973	1974	1975	1976			
12. TransCanada PipeLines Limited GL-42(d) 15/04/71 - 31/10/71 01/11/71 - 31/10/94	N/S N/S	8,218 92,218	82,057	85,082	79,791	77,910	81,322	{ 424,073	2,129,232	1,705,159
13. TransCanada PipeLines Limited EO-2-62	N/S	N/S	2	—	—	—	—		2	5
14. TransCanada PipeLines Limited EO-1-63	70,000	N/S	199	—	—	—	—	199	1,000	N/A
15. Union Gas Company of Canada Limited EO-2-63	N/S	N/S	55	—	—	—	—	55	55	—
16. Union Gas Company of Canada Limited EO-3-63	N/S	N/S	1,083	—	—	—	—	1,083	1,965 (b)	N/A
17. TransCanada Pipelines Limited EO-1-64	140,000	N/S	2,511	—	—	—	—	2,511	2,500	N/A
18. TransCanada PipeLines Limited EO-2-64 (AO-1)	150,000	N/S	1,756	—	—	—	—	1,756	3,450	N/A
19. Union Gas Company of Canada Limited EO-2-66 (AO-1)	N/S	N/S	7,861	—	—	—	—	7,861	7,861 (b)	—
20. Union Gas Company of Canada Limited EO-1-67	N/S	N/S	7,861	—	—	—	—	7,861	7,861 (b)	—
21. TransCanada PipeLines Limited EO-2-67	N/S	N/S	389	—	—	—	—	389	500	N/A
22. Westcoast Transmission Company Limited EO-4-70	N/A	N/A	1	—	—	—	—	1	N/A	—
23. TransCanada PipeLines Limited EO-1-72	100,000	N/A	121	—	—	—	—	121	N/S	N/A
24. TransCanada PipeLines Limited EO-4-72	40,000	N/A	20	—	—	—	—	20	40	N/A
25. TransCanada Pipelines Limited EO-1-74	150	N/A	—	—	79	—	—	79	N/S	N/A
26. TransCanada Pipelines Limited EO-2-74	N/S	N/A	—	—	66	—	—	66	N/S	N/A

APPENDIX VIII (CONT'D)

Imports of Natural Gas

Importer and Licence/ Order	Maximum		(MMcf)						Total Authorized Imports	Remaining(a) Under Licences
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/71	1972	1973	1974	1975	1976	Cumulative to 31/12/76	
27. TransCanada PipeLines Limited EO-1-75(f)	120,000	N/A	—	—	—	—	208	—	208	N/A
28. TransCanada PipeLines Limited EO-2-75(f)	4,000	N/A	—	—	—	—	3	—	3	N/A
Gross Imports			999,052	332,399	367,403	338,367	323,100	329,138	2,689,459	
Deduct Imports for Re-Exports:										
Item 9, GLI-5(c)			—	2,669	28,604	19,663	15,769	14,654	81,359	
Item 25, EO-1-74			—	—	—	79	—	—	79	
Item 26, EO-2-74			—	—	—	66	—	—	66	
Item 27, EO-1-75(f)			—	—	—	—	208	—	208	
Item 28, EO-2-75(f)			—	—	—	—	3	—	3	
Deduct Re-Imports of Exports:										
Item 10, GL-21(d)			631,883	220,480	228,608	214,392	209,337	218,505	1,723,205	
Item 11, GL-30(e)			9,145	11,500	10,286	11,114	9,654	10,605	62,304	
Item 12, GL-42(d)			17,911	82,057	85,082	79,791	77,910	81,322	424,073	
Net Imports			340,113	15,693	14,823	13,262	10,219	4,052	398,162	

(a) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.

(b) Converted from "wet base" to "dry base" for purpose of comparability.

(c) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(d) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(e) The quantities of gas authorized for import by this licence near Loomis, Saskatchewan, are authorized to be exported at Emerson, Manitoba, pursuant to Licence GL-44.

(f) This licence authorizes an import for re-export on an emergency basis near Niagara Falls, Ontario.

N/S Not specified

N/A Not applicable

APPENDIX IX

Exports of Canadian Crude Oil and Equivalent to the United States 1975 and 1976. (Barrels of 34.9722 Standard Gallons)

		1975		1976	
		Total for Year	Daily Average	Total for Year	Daily Average
<i>Districts I – IV</i>					
Amoco Oil Company	Whiting, Indiana	8,130,767	22,276	3,240,461	8,854
Amoco Oil Company	Mandan, N. Dakota	3,290,116	9,014	3,159,438	8,632
Amoco Oil Company	Sugar Creek, Missouri	75,500	207	—	—
Amoco Oil Company	Casper, Wyoming	592,000	1,622	—	—
American Petrofina Inc.	Kansas City, Kansas	4,425	12	—	—
Ashland Oil & Refining Co.	N. Tonawanda, New York	13,230,651	36,248	2,603,325	7,113
Ashland Oil & Refining Co.	Canton, Ohio	65,766	180	—	—
Ashland Oil & Refining Co.	Findlay, Ohio	790,179	2,165	1,366,549	3,734
Ashland Oil & Refining Co.	St. Paul, Minnesota	16,048,052	43,967	18,258,576	49,887
Bay Refining Company	Bay City, Michigan	567,966	1,556	1,137,374	3,108
C.F. Petroleum Co.	East Chicago, Indiana	3,568,805	9,778	1,520,854	4,155
Canadian Hydrocarbons Ltd.	Cut Bank & Kevin, Montana	938,209	2,570	898,721	2,456
Clark Oil & Refining Corp.	Blue Island, Illinois	7,278,204	19,940	2,801,125	7,653
Cliffs Fuel Service Co.	Rapid River, Michigan	67,420	185	62,869	172
Continental Oil Company	Billings, Montana	9,656,738	26,457	11,382,473	31,100
Continental Oil Company	Denver, Colorado	1,214,842	3,328	162,097	443
Continental Oil Company	Wrenshall, Minnesota	7,688,014	21,063	7,268,113	19,858
Consumers Power Company	Bay City, Michigan	4,934,770	13,520	3,633,307	9,927
Consumers Power Company	Marysville, Michigan	10,176,254	27,880	9,758,904	26,664
CRA Incorporated	Phillipsburg, Kansas	125,706	344	33,643	92
CRA Incorporated	Scotsbluff, Nebraska	226,196	620	20,679	57
Crystal Refining Co. of Carson City Inc.	Carson City & Kalamazoo, Michigan	779,673	2,136	391,768	1,070
Derby Refining Company	Wichita, Kansas	250,000	685	—	—
Detroit Edison Company	River Rouge, Michigan	195,568	536	9,000	25
Exxon Co., U.S.A.	Billings, Montana	5,808,592	15,914	5,784,241	15,804
Farmers Union Central Exchange Inc.	Laurel, Montana	4,362,391	11,952	5,311,415	14,512
Gladieux Refining Inc.	Fort Wayne, Indiana	197,925	542	64,701	177
Gulf Oil Corporation	Toledo, Ohio	4,162,049	11,403	2,118,535	5,788
Husky Oil Company	Cheyenne and Cody, Wyoming	180,000	493	215,743	589
Koch Refining Co.	Pine Bend, Minnesota	27,952,687	76,583	27,019,011	73,823
Lake Superior District Power	Ashland, Wisconsin	—	—	31,500	86
Little America Refining Co.	Casper, Wyoming	116,949	320	289,309	790
Marathon Oil Company	Detroit, Michigan	3,492,440	9,568	1,498,900	4,095
Mobil Oil Company	Buffalo, New York	9,055,376	24,809	3,667,214	10,020
Mobil Oil Company	Joliet, Illinois	3,911,281	10,716	—	—
Murphy Oil Corporation	Superior, Wisconsin	8,900,593	24,385	9,585,076	26,189
National Cooperative Refinery Ass.	McPherson, Kansas	165,925	455	—	—
Pasco Oil Company	Sinclair, Wyoming	189,287	519	161,698	442
Peoples Gas Light & Coke Uty.	Joliet, Illinois	36,000	99	243,812	666
Phillips Petroleum Co.	Kansas City, Kansas & Great Falls, Montana	1,429,684	3,917	723,428	1,977
Refinery Corporation	Denver, Colorado	—	—	12,129	33
Rock Island Oil Co.	Rock Island, Indiana	243,257	666	60,594	166
Shell Oil Company	Wood River, Illinois	4,888,232	13,393	478,483	1,307
Skelly Oil Company	El Dorado, Kansas	1,375,733	3,769	66,573	182
Standard Oil Company (Ohio)	Toledo, Ohio	11,625,016	31,849	3,722,614	10,171
Sun Oil Company	Toledo, Ohio	5,621,776	15,402	3,142,095	8,585
Tesoro Petroleum	Newcastle, Wyoming & Wolf Point, Montana	243,731	668	9,687	26
Texaco Incorporated	Lockport, Illinois	170,012	466	—	—
Texaco Incorporated	Casper, Wyoming	489,176	1,340	428,793	1,172
Total Leonard Ref. Inc.	Alma, Michigan	3,125,878	8,564	1,979,950	5,410
Union Oil Co. of California	Lemont, Illinois	3,764,783	10,315	1,268,407	3,466
Union Refining Co.	Warren, Pennsylvania	3,884,718	10,643	1,405,980	3,841
United Refining Co.	West Branch, Michigan	910,340	2,494	616,332	1,684
Other		1	—	8	—
Total Districts I – IV		196,199,653	537,533	137,615,504	375,999

APPENDIX IX (CONT'D)

Exports of Canadian Crude Oil and Equivalent to the United States 1975 and 1976.
(Barrels of 34.9722 Standard Gallons)

		1975		1976	
		Total for Year	Daily Average	Total for Year	Daily Average
<i>District V</i>					
Atlantic Richfield Oil Co.	Cherry Point, Washington	11,498,697	31,503	6,045,936	16,519
Mobile Oil Company	Ferndale, Washington	15,986,345	43,798	9,595,850	26,218
Shell Oil Company	Anacortes, Washington	20,406,906	55,910	9,921,979	27,109
Texaco Incorporated	Anacortes, Washington	14,090,330	38,604	7,064,714	19,303
Total District V		61,982,278	169,815	32,628,479	89,149
Total U.S.A.		258,181,931	707,348	170,243,983	465,147

Source: Company reports to the Board.

APPENDIX X

Pipeline Leaks, Breaks and Malfunctions 1976

Origin of Reported Incidents	Number of Incidents
Internal and external corrosion of pipe and equipment	2
Defective Mill Welds	2
Defective Fields Welds	5
Pipe Material Defects	1
Defective Equipment and Piping	13
Damage during Construction by others	14
Miscellaneous	6
Total	43

Two incidents resulted in a total of three fatalities.

APPENDIX XI

New Licences and Orders to Export Electric Power and Energy issued during 1976

Applicant	Class	Kilowatts	Annual Kilowatthours (Millions)	Term	Application heard	Issued	Licence No.
<i>A. New Licences issued in 1976 Pursuant to Section 82</i>							
1. The Manitoba Hydro- Electric Board	Inter- ruptible		3,000	01/11/76 to 31/10/82	13-17 Jan. 1976 20-24 Jan. 1976	01/03/76	EL-90
2. The Manitoba Hydro- Electric Board	Firm		1,200	01/11/76 to 31/10/82	13-17 Jan. 1976 20-24 Jan. 1976	01/03/76	EL-91
3. The Manitoba Hydro- Electric Board	Firm		1,200	01/11/76 to 31/10/82	13-17 Jan. 1976 20-24 Jan. 1976	01/03/76	EL-92
4. The Manitoba Hydro- Electric Board	Firm		300	01/11/76 to 31/10/82	13-17 Jan. 1976 20-24 Jan. 1976	01/03/76	EL-93
5. Ontario Hydro	Inter- ruptible		8,000	01/07/76 to 31/12/85	16-19 Mar. 1976 22-26 Mar. 1976	27/06/76	EL-94
6. Ontario Hydro	Inter- ruptible		15,000	01/07/76 to 31/12/85	16-19 Mar. 1976 22-26 Mar. 1976	27/06/76	EL-95
7. Quebec Hydro-Electric Commission	Firm	800,000	2,140 (1977) 3,000 (other years)	01/06/77 to 31/10/91	01-04 June 1976 07-11 June 1976 28-29 June 1976	01/09/76	EL-96

APPENDIX XI (CONT'D)

New Licences and Orders to Export Electric Power and Energy issued during 1976

Applicant	Class	Kilowatts	Annual Kilowatthours (Thousands)	Term From Date of Issue-Months	Issued	Order No.
B. New Orders Issued in 1976 Pursuant to Section 6A of the Regulations Under Part VI of the Act*						
1. Quebec Hydro-Electric Commission	Firm	20	35	35	15/04/76	ELO-114
2. Quebec Hydro-Electric Commission	Firm	50	130	35	15/04/76	ELO-115
3. Quebec Hydro-Electric Commission	Firm	20	100	36	15/04/76	ELO-116
4. Quebec Hydro-Electric Commission	Firm	20	50	35	15/04/76	ELO-117
5. Quebec Hydro-Electric Commission	Firm	65	110	35	15/04/76	ELO-118
6. Quebec Hydro-Electric Commission	Firm	5	5	35	15/04/76	ELO-119
7. Quebec Hydro-Electric Commission	Firm	2	2	35	15/04/76	ELO-120
8. Quebec Hydro-Electric Commission	Firm	57	150	29	15/04/76	ELO-121
9. Ontario Hydro	Firm	25	20	36	06/05/76	ELO-122
10. The Canadian Transit Company	Firm	100	25	36	01/09/76	ELO-123
11. British Columbia Hydro and Power Authority	Firm	300	1,000	36	27/05/76	ELO-124
12. The New Brunswick Electric Power Commission	Firm	200	250	36	05/08/76	ELO-125
13. The New Brunswick Electric Power Commission	Firm	12	30	36	05/08/76	ELO-126
14. The New Brunswick Electric Power Commission	Firm	25	10	36	05/08/76	ELO-127
15. The Detroit and Windsor Subway	Firm	300	1,000	36	05/08/76	ELO-128
16. Cedars Rapids Transmission Company	Inter-ruptible		20,000	36	25/11/76	ELO-129

*Under Section 6A the Board may by order authorize the exportation of not more than 4,000 kilowatts of electric power and not more than 20,000,000 kilowatthours per year of electrical energy for a term not exceeding three years upon such terms and conditions as the Board may

APPENDIX XI (CONT'D)

New Licences and Orders to Export Electric Power and Energy issued during 1976

Applicant	Class	Kilowatts	Term	Issued	Order No.
<i>C. Emergency Orders Issued in 1976 Pursuant to Section 19 of the Regulations under Part VI of the Act*</i>					
1. The Ontario-Minnesota Pulp and Paper Co. Ltd.	Firm	4,000	20/06/76 to 26/06/76	20/06/76	EOE-1-76
2. The Ontario-Minnesota Pulp and Paper Co. Ltd.	Firm	4,000	12/10/76 to 19/10/76	12/10/76	EOE-2-76
3. The Ontario-Minnesota Pulp and Paper Co. Ltd.	Firm	3,000	25/10/76 to 31/05/77	25/10/76	EOE-3-76
*Under Section 19 the Board may by order authorize the export of power where, in the opinion of the Board, emergency conditions have arisen that may cause an interruption in the supply of power to consumers served by interconnected system in the U.S.A. or Canada.					

Applicant	Description	Issued	Order No.
<i>D. Revoking Orders Issued in 1976 Pursuant to Section 84</i>			
1. Manitoba Hydro Electric Board	Order to revoke Licence EL-56 dated 10 March 1970	06/05/76	RO-1-EL-56
2. Manitoba Hydro Electric Board	Order to revoke Licence EL-57 dated 10 March 1970	06/05/76	RO-1-EL-57

Applicant	Associated Licence	Issued	Order No.
<i>E. Amending Orders Issued in 1976 Relative to Electric Power Export Licences</i>			
1. The New Brunswick Electric Power Commission	EL-66	06/05/76	AO-2-EL-66
2. The New Brunswick Electric Power Commission	EL-68	06/05/76	AO-1-EL-68
3. The New Brunswick Electric Power Commission	EL-69	06/05/76	AO-1-EL-69
4. The New Brunswick Electric Power Commission	EL-70	06/05/76	AO-1-EL-70
5. The New Brunswick Electric Power Commission	EL-71	06/05/76	AO-1-EL-71
6. Canadian Niagara Power Company, Limited	EL-83	08/06/76	AO-1-EL-83
7. Southern Canada Power Company, Limited	EL-30	07/10/76	AO-8-EL-30
8. Southern Canada Power Company, Limited	EL-31	07/10/76	AO-8-EL-31

APPENDIX XII

Exports of Electric Energy — Calendar Year 1976

Exporter	Licence Number	Thousands of Kilowatthours					Reported Dollar Value of Export	
		Licence Authorization		Gross Energy Exported			Firm	Inter-ruptible
		Firm	Inter-ruptible	Firm	Inter-ruptible	Exchange ⁽¹⁾		
							\$	\$
1. Maine and New Brunswick Electrical Power Company, Limited	EL-22 EL-23	250,000	25,000	144,432	497		1,087,978	1,242
2. Fraser Companies, Limited	EL-79 EL-80	400,000	30,000	295,750	—		4,559,555	—
3. The New Brunswick Electric Power Commission	EL-64 EL-65 AO-2-EL-66 EL-67 EL-68 EL-69 EL-70 EL-71 ELO-125 to ELO-127	3,504,000 500,000 473,040 102,492 100,000 290	876,000 150,000 163,812	790,773 244,540 56,487 231	849,373 15,328 4,549	7,054 50,795 8,318	20,080,734 4,425,484 1,078,529 8,325	11,036,459 367,516 68,571
Sub-Total New Brunswick				1,532,213	869,747	66,167	31,240,605	11,473,788
4. Cedars Rapids Transmission Company Limited	ELO-110		20,000		—			—
5. Quebec Hydro-Electric Commission	EL-78 ELO-114 to ELO-121	582	1,530,000	413	432,968	23,340	5,144	8,900,096
6. Southern Canada Power Company Limited	AO-8-EL-30 AO-8-EL-31	13,000	74,250	11,465	56,730		237,985	850,354
Sub-Total Quebec				11,878	489,698	23,340	243,129	9,750,450
7. Ontario Hydro	EL-32 AO-1-EL-76 EL-94 EL-95 ELO-122	15,000	8,250,000 8,000,000 15,000,000 20	1,018 24	2,209,776 1,859,316	678,475 942,088 227	2,035 512	48,219,054 38,581,998
8. Canadian Niagara Power Company Limited	EL-83 EL-84	260,900	200,000	162,576	7,442		1,837,869	74,424
9. The Ontario-Minnesota Pulp and Paper Company Limited	EL-62 EL-63	271,600	87,600	236,142	—		3,355,844	—
10. The Detroit and Windsor Subway Company	ELO-111	1,000		883			—	—
11. The Canadian Transit Company	ELO-123	25		24			—	—
12. St. Lawrence Power Company	EL-77		150,000		119,137			1,189,090
Sub-Total Ontario				400,667	4,195,671	1,620,790	5,196,260	88,064,566

APPENDIX XII (CONT'D)

Exports of Electric Energy — Calendar Year 1976

Thousands of Kilowatthours								
Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Reported Dollar Value of Export	
		Firm	Inter-ruptible	Firm	Inter-ruptible	Exchange ⁽¹⁾	Firm	Inter-ruptible
13. Manitoba Hydro	RO-1-EL-56	784,000		88,477			1,391,838	
	RO-1-EL-57		1,100,000		547,453	54,694		5,827,208
	EL-90		3,000,000		50			1,368
	EL-91	784,000		16,803			759,084	
	EL-92	1,200,000				3,971		
	EL-93	300,000				7,570		
	ELO-112	15		13			361	
Sub-Total				105,293	547,503	66,235	2,151,283	5,828,576
14. British Columbia Hydro and Power Authority	EL-85	25,000		10,296			166,143	
	EL-86	1,500,000				—		
	EL-87	800,000				—		
	EL-88	2,000,000		—			—	
	EL-89		3,600,000		1,289,667	768,438		15,158,222
	ELO-124	600		172			12,733	
15. Cominco Ltd.	EL-20		500,000			—		
	EL-81	600,000		—			—	
	EL-82		1,500,000		599,395	206,423		4,478,163
16. West Kootenay Power and Light Company	ELO-113	50		34			787	
Sub-Total British Columbia				10,502	1,889,062	974,861	179,663	19,636,385
Total Canada				2,060,553	7,991,681	2,751,393	39,010,940	134,753,765

(1) Exchange is no value energy. It includes inadvertent and circulating flows, equichange, storage, adjustment transfers and wheeling or carrier transfer.

APPENDIX XIII

Total Canadian Electric Energy Supply and Trade with the United States — Calendar Year 1976 (Millions of Kilowatthours)

Electric Energy Generation for all Canada	— 293,411 (preliminary)
Electric Energy Importation from U.S.A.	— 3,590 "
Total Canadian Electric Energy Supply	— 297,001 "
Electric Energy Export (Gross) to U.S.A.	— 2,061 (firm) — 0.7% Canadian Supply
	— 7,992 (interruptible) — 2.7% of Canadian Supply
	— 2,751 (exchange) — 0.9% of Canadian Supply

APPENDIX XIV

Exports of Propane, Ethane and Butane Under Long Term Licences and Orders – 1976 (Volume in Barrels)

Exporter	Licence or Order Number	Period		Authorized Maximum Export Quantity in Period		1976 Actual Export	
		From	To	Gross	Net	Gross	Net
A. Propane							
1. Dome Petroleum Limited	GL-31 (AO-4) ^(a)	01/01/76	31/12/76	5,751,500	5,121,500	4,833,474 ^(e)	5,121,500 ^(f)
2. Amoco Canada Petroleum Company Ltd.	GL-32 (AO-2) ^(a)	01/01/76	31/12/76	3,421,500	3,046,500	3,421,500	2,231,547
3. PanCanadian Gas Products Ltd.	GL-34 (AO-3) ^(a)	01/01/76	31/12/76	2,330,00	2,075,000	1,914,340	329,993 ^(g)
4. Dome Petroleum Limited	GL-46 (AO-2) ^(a)	01/04/76	31/03/77	N/A	2,990,000	N/A	1,501,542
5. Imperial Oil Limited	EPR-904-75 ^(b)	01/01/76	31/12/76	N/A	4,595,000	N/A	2,815,436
6. Amoco Canada Petroleum Company Ltd.	EPR-906-76 ^(b)	29/10/76	31/01/77	N/A	910,000	N/A	565,525
B. Ethane							
1. Dome Petroleum Limited	GL-45 (AO-2) ^(a)	01/04/76	31/03/77	N/A	1,830,000	N/A	999,596
C. Butane							
1. Dome Petroleum Limited	EBU-1-74 (AO-1) ^(c)	01/04/76	31/03/77	N/A	3,380,000	N/A N/A	1,719,776
2. Dome Petroleum Limited	EBU-132-74 ^(d)	01/01/76	31/12/76	N/A	3,851,100	N/A	—
3. Amoco Canada Petroleum Company Ltd.	EBU-133-74 ^(d)	01/01/76	31/12/76	N/A	4,168,100	N/A	2,449,309
4. PanCanadian Gas Products Ltd.	EBU-134-74 ^(d)	01/01/76	31/12/76	N/A	1,346,400	N/A	1,179,818

APPENDIX XIV (CONT'D)

Exports of Propane, Ethane and Butane Under Long Term Licences and Orders — 1976 (Volume in Barrels)

Exporter	Licence or Order Number	Period		Authorized Maximum Export Quantity in Period		1976 Actual Export	
		From	To	Gross	Net	Gross	Net
5. Dome Petroleum Limited	EBU-900-75 ^(c)	01/03/75	29/02/76	N/A	1,424,000	N/A	—
6. Imperial Oil Limited	EBU-905-75 ^(d)	01/01/76	31/12/76	N/A	2,757,000	N/A	1,405,129

(a) See Appendix for licence particulars.

(b) This is an export-import order which allows the exportation of propane near Gretna, Manitoba and the importation of said propane near Sarnia, Ontario.

(c) This is an import-export order which allows the importation of butane near Sarnia, Ontario and the exportation of said butane near Windsor, Ontario and/or Sarnia, Ontario.

(d) This is an export-import order which allows the exportation of butane near Gretna, Manitoba and the importation of said butane near Sarnia, Ontario.

(e) Gross Exports only include exports at Gretna Manitoba under the name of Dome Petroleum Limited.

(f) Includes exports from purchases by Dome Petroleum Limited in Ontario.

(g) In addition there were 1,640,914 export barrels charged to GL34 which were sold to stillings petroleum (Canada) Ltd. during the period and subsequently exported to the U.S. under various orders.

APPENDIX XV

Imports of Propane, Ethane and Butane under Long Term Licences and Orders – 1976

(Volume in Barrels)

Importer	Licence or Order Number	Period		Authorized Maximum Import Quantity in Period	1976 Actual Import
		From	To		
A. Propane					
1. Dome Petroleum Limited	GL-31(AO-4) (a)	01/01/76	31/12/76	5,751,500	4,084,473
2. Amoco Canada Petroleum Company Ltd.	GL-32(AO-2) (a)	01/01/76	31/12/76	3,421,500	2,294,986
3. PanCanadian Gas Products Ltd.	GL-34(AO-3) (a)	01/01/76	31/12/76	2,330,000	1,684,712
4. Dome Petroleum Limited	GL-46(AO-2) (a)	01/04/76	31/03/77	2,990,000	1,336,577
5. Imperial Oil Limited	EPR-904-75 (b)	01/01/76	31/12/76	4,595,000	2,815,436
6. Amoco Canada Petroleum Company Ltd.	EPR-906-76 (b)	29/10/76	31/01/77	910,000	709,552
Importer	Licence or Order Number	Period		Authorized Maximum Import Quantity in Period	1976 Actual Import
		From	To		
B. Ethane					
1. Dome Petroleum Limited	GL-45(AO-2) (a)	01/04/76	31/03/77	1,830,000	884,141
Importer	Licence or Order Number	Period		Authorized Maximum Import Quantity in Period	1976 Actual Import
		From	To		
C. Butane					
1. Dome Petroleum Limited	EBU-1-74 (AO-1) (c)	01/04/76	31/03/77	3,380,000	1,539,200
2. Dome Petroleum Limited	EBU-132-74 (d)	01/01/76	31/12/76	3,851,100	2,078,075
3. Amoco Canada Petroleum Company Ltd.	EBU-133-74 (d)	01/01/76	31/12/76	4,168,100	1,890,264
4. PanCanadian Gas Products Ltd.	EBU-134-74 (d)	01/01/76	31/12/76	1,346,400	1,025,363
5. Dome Petroleum Limited	EBU-900-75 (c)	01/03/75	29/02/76	1,424,000	—
6. Imperial Oil Limited	EBU-905-75 (d)	01/01/76	31/12/76	2,757,000	1,405,129

(a) See Appendix for licence particulars.

(b) This is an export-import order which allows the exportation of propane near Gretna, Manitoba and the importation of said propane near Sarnia, Ontario.

(c) This is an import-export order which allows the importation of butane near Sarnia, Ontario and the exportation of said butane near Windsor, Ontario and/or Sarnia, Ontario.

(d) This is an export-import order which allows the exportation of butane near Gretna, Manitoba and the importation of said butane near Sarnia, Ontario.

APPENDIX XVI

Net Exports of Propane (Volume in barrels)

Exporters	1975	1976
Amerada Minerals Corp. of Canada	12,015	—
Amoco Canada Petroleum Co. Ltd	2,578,506	2,943,924
Big Horn Supply Ltd	—	19,204
Burnwell Gas of Canada Ltd	15,504	88,896
Canadian Enterprise Gas Products Ltd	229,687	535,989
Canadian Propane Gas & Oil Ltd	225,321	58,569
Canadian Superior Oil Ltd	495,033	594,811
Canmore Mines Ltd	157,707	300,938
Chevron Standard Ltd	1,249,560	1,172,618
Cigas Products Ltd	370,629	271,903
Columbia Gas Development of Canada Ltd	—	650,055
C.M. Dining (Canada) Ltd	3,132	—
Dome Petroleum Ltd	4,158,318	5,858,728
Dow Chemical of Canada Ltd	1,029,029	298,305
Elgin Petroleum Ltd	23,634	41,458
Gasbec Inc.	445,592	308,266
Gas Supply (Minneapolis) Ltd	15,759	20,993
Gavan Petroleums Ltd	40,153	66,476
Goliad Oil & Gas Co. & Goliad Ltd	370,471	356,568
Gulf Oil Canada Ltd	2,908,279	3,121,641
Hidrogas Ltd	199,911	—
Home Oil Co. Ltd	520,661	543,164
Hudson's Bay Oil & Gas Co. Ltd	502,979	409,673
Imperial Oil Ltd	868,586	1,096,480
Irving Oil Ltd	2,650	8,943
Koch Oil Co. Ltd	88,392	78,337
M—P Petroleum Ltd	110,380	160,808
Mobil Oil Canada Ltd	358,471	490,947
N.G.L. Supply Ltd	395,476	383,576
Northern Petro Products Ltd	118,257	119,164
Northwest LPG Supply Ltd	125,720	104,943
Pacific Petroleums Ltd	1,365,630	1,488,461
PanCanadian Gas Products Ltd	1,154,068	329,993
Petrosol Ltd	—	34,283
Real Marketing Ltd	10,307	16,936
Shaban Manufacturing Ltd	236	370
Shell Canada Ltd	241,000	94,153
Solar Gas Ltd	748	—
Stillings Petroleum (Canada) Ltd	922,194	2,110,753
Sun Oil Co. Ltd	40,000	—
Texaco Canada Ltd	—	2,064
Texaco Exploration Canada Ltd	115,509	280,611
Union Oil Co. of Canada Ltd	204,890	200,763
Union Texas of Canada Ltd	346,895	463,160
Weskem of Canada Ltd	33,088	44,651
Totals	22,054,377	25,171,575

APPENDIX XVI (CONT'D)

Net Exports of Butane (Volume in barrels)

Exporters	1975 (Revised)	1976
Amerada Minerals Corp. of Canada	21,477	—
Amoco Canada Petroleum Co. Ltd	1,763,171	2,294,495
Beigo Canada Manufacturing Co. Ltd	14	11
Big Horn Supply Ltd	—	15,695
Canadian Enterprise Gas Products Ltd	304,225	338,024
Canadian Propane Gas & Oil Ltd	8,716	170
Canadian Superior Oil Ltd	370,366	356,393
CDC Oil & Gas Ltd	14,369	—
Chevron Standard Ltd	75,814	137,883
Cigas Products Ltd	274,344	483,903
Columbia Gas Development of Canada Ltd	150,000	54,905
Dome Petroleum Ltd	1,814,371	3,172,496
Gas Supply (Minneapolis) Ltd	9,738	13,849
Gavan Petroleums Ltd	52,195	19,225
Goliad Oil & Gas Co. & Goliad Ltd	129,090	329,117
Hidrogas Ltd	115,125	—
Home Oil Co. Ltd	190,139	305,090
Hudson's Bay Oil & Gas Co. Ltd	1,675,091	1,709,502
Husky Oil Operations Ltd	185,155	225,256
Imperial Oil Ltd	386,753	665,745
Koch Oil Co. Ltd	1,450,814	1,599,525
M-P Petroleum Ltd	22,176	80,615
Mobil Oil Canada Ltd	1,039,083	1,137,636
Murphy Oil Co. Ltd	54,642	90,952
N.G.L. Supply Ltd	88,884	26,289
Northern Petro Products Ltd	55,376	22,847
Pacific Petroleums Ltd	908,130	740,289
PanCanadian Gas Products Ltd	323,575	181,265
Petrosol International Inc.	—	9,001
Petrosol Ltd	—	80,916
Shell Canada Ltd	2,205,776	1,850,729
Stillings Petroleum (Canada) Ltd	98,407	433,135
Texaco Exploration Can. Ltd	592,147	684,243
Union Oil Co. of Canada Ltd	6,640	—
Totals	14,385,803	17,059,201

APPENDIX XVII

LICENCES ISSUED FOR EXPORTS OF CRUDE OIL AND CONDENSATE TO U.S.—1976

Exporter	Barrels	
	Crude	Condensate
Amoco Canada Petroleum Company Ltd.	5,568,334	834,385
Ashland Oil Canada Ltd.	18,483,785	2,888,100
Canadian Propane Gas Oil Ltd.	808,932	61,498
Canadian Superior Oil Ltd.	118,358	56,172
Dome Petroleum Company Ltd.	1,168,409	9,571,760
Gibson Petroleum Company Ltd.	802,736	63,583
Great Canadian Oil Sands Ltd.	2,179,710	—
Gulf Oil Canada Ltd.	2,719,315	295,227
Hudson's Bay Oil and Gas Company Ltd.	18,064,811	5,885,303
Husky Oil Operations Ltd.	1,743,200	—
Imperial Oil Ltd.	24,243,426	2,165,303
Koch Oil Company Ltd.	26,967,555	—
Mobil Oil Company Ltd.	11,895,709	1,371,818
Murphy Oil Company Ltd.	9,099,389	161,272
Petrosar Limited	2,125,125	883,589
Shell Canada Ltd.	8,902,284	1,107,630
Sun Oil Company Ltd.	1,605,200	367,464
Texaco Exploration Canada Ltd.	7,431,774	65,354
Union Oil Company of Canada	1,585,520	326,071
Total Licences Issued in 1976	145,513,572	26,104,529

APPENDIX XVIII

Export Charges in 1976 for Crude Oil and Refined Petroleum Products (\$ per barrel)

1976	Janu- ary	Feb- ruary	March	April	May	June	July	Au- gust	Sep- tember	Octo- ber	No- vember	De- cember
Light & Medium Crude Oil	4.50	4.50	4.60	4.60	4.60	4.60	4.60 ⁽²⁾	3.65	3.65	3.80	3.75	3.75
Designated Heavy Crude Oils ⁽¹⁾	3.80	3.80	3.80	3.80	3.80	3.80	3.80 ⁽²⁾	2.85	2.85	3.00	3.35	3.35
Lloydminster Type Blends	3.70	3.70	3.70	3.70	3.70	3.70	3.70 ⁽²⁾	2.75	2.75	2.90	2.90	2.90
Condensate	4.50	4.50	4.60	4.60	4.60	4.60	4.60 ⁽²⁾	3.65	3.65	3.80	3.75	3.75
Motor Gasoline	3.50	3.50	3.50	3.50	4.00	4.75	4.75	4.50	3.25	3.25	3.25	3.25
Middle Distillates	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.00	3.00	3.00	3.00
Heavy Fuel Oil	1.75	1.75	2.50	2.50	2.50	3.25	3.25	3.25	3.00	3.50	3.50	3.50
Partially Processed Oils	4.50	4.50	4.60	4.60	4.60	4.60	4.60	3.65	3.65	3.80	3.75	3.75

- (1) I) All streams below 25° API. (Oil carried by British Petroleum Exploration Canada Limited pipeline 'Chauvin' systems in Alberta, and Area III medium crude oil in Saskatchewan are included in this category.)
 II) The Bow River Pipelines Ltd. stream in Alberta excluding light and medium production normally batched separately from the Bellshill Lake and Provost (Hamilton Lake) fields.
 III) The Bow River Pipelines Ltd. (Mid-Saskatchewan Pipeline System) stream in Saskatchewan Area II excluding any light production normally batched separately but including all Area II heavy (Smiley Coleville Type) and light crude blended with the heavy for the purpose of transportation ease (Smiley-Eureka-Doddsland).
 IV) Batches predominantly consisting of Midale/Weyburn medium gravity crude oil transported by the Trans Praire Pipelines Ltd. and Producers Pipelines Ltd. systems from Area IV in Saskatchewan.
- (2) Reduction of \$1.05 per barrel applicable in respect of volumes exported in July which entered exporting pipeline systems on or after 1 July 1976.

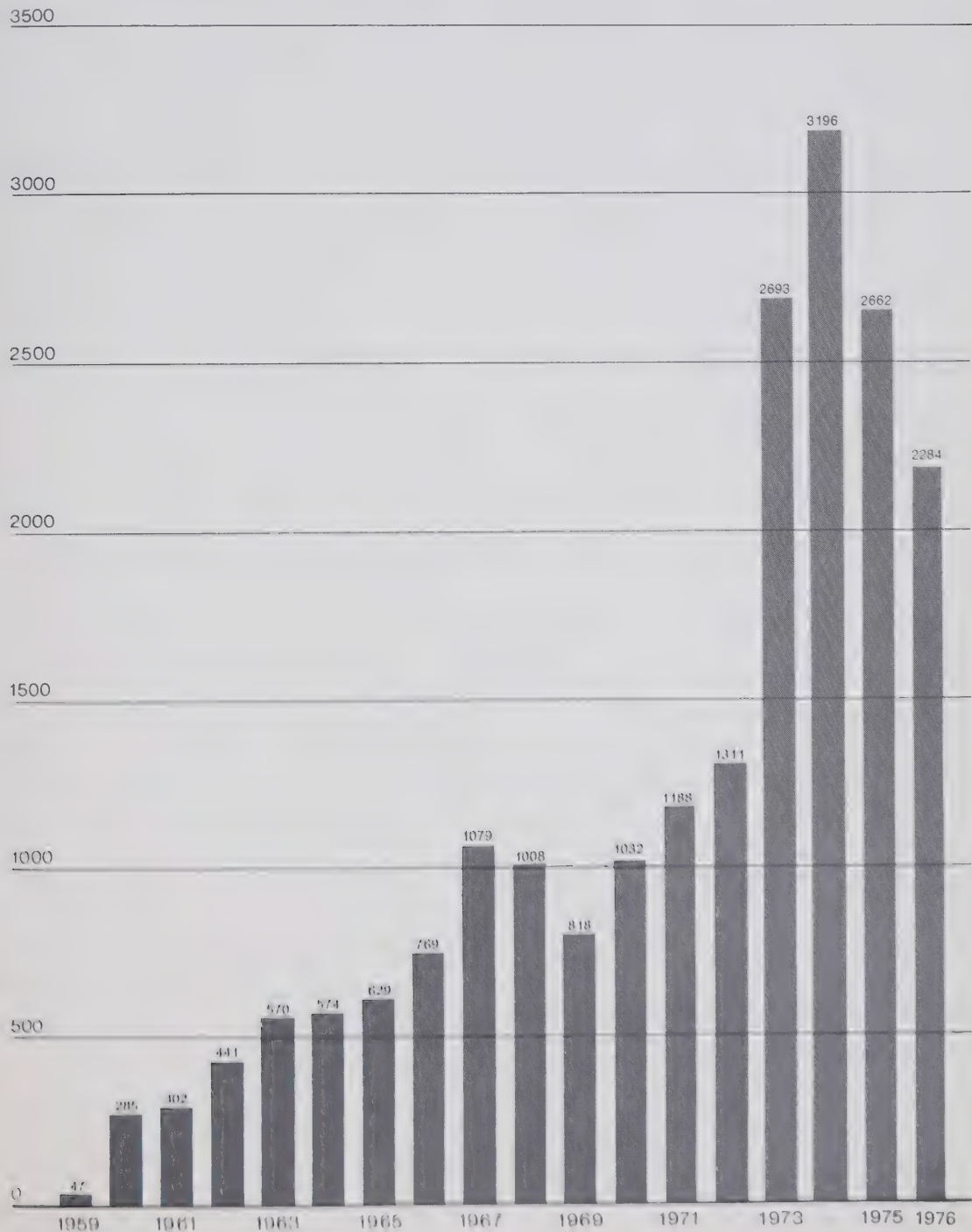
APPENDIX XIX

Exports of Licensed Petroleum Products – 1976 (Barrels)

	Partially Processed Oil	Motor Gasoline	Heavy Fuel Oil	Middle Distillate	Total
January	23,620	373,615	2,240,689	347,835	2,985,759
February	—	12	1,957,006	141,765	2,098,783
March	164,102	2,237	1,033,946	61,952	1,262,237
April	190,923	405,492	1,046,505	80,605	1,723,525
May	110,858	1,081,388	1,912,647	44,849	3,149,742
June	140,922	1,206,832	1,456,805	38,802	2,843,361
July	135,825	2,046	1,941,005	43,320	2,122,196
August	166,554	8	1,791,284	13,082	1,970,928
September	110,660	1,657	1,065,896	149,009	1,327,222
October	85,436	999	1,201,371	39,048	1,326,854
November	36,410	229,446	1,167,415	33,448	1,466,729
December	113,589	32,371	443,381	120,490	709,831
Total	1,278,899	3,336,103	17,257,960	1,114,205	22,987,167

APPENDIX XX

Total Number of Board Certificates, Licences, Permits, Orders and Authorizations Between 1959 and 1976
The National Energy Board Act was proclaimed on November 2, 1959





APPENDIX XXI

Exchanges of Crude Oil with U.S. Refiners — 1976

Licence Holder	Exchange Partner	Quantity in Barrels		
		Licensed	Exported	Imported
BP Canada Ltd.	Koch Refining Co.	62,000	60,000	60,000
Gulf Oil Canada Ltd.	Murphy Oil Corp.	462,000	359,815	359,815
Gulf Oil Canada Ltd.	Ashland Oil & Ref. Co.	430,000	414,000	414,000
Gulf Oil Canada Ltd.	Total Leonard Ref. Inc.	75,000	75,148	74,987
Hudson's Bay Oil & Gas Co.	Continental Oil Co.	330,000	330,000	330,000
Shell Canada Ltd.	Shell Oil Co.	1,380,000	1,187,197	1,178,280
Shell Canada Ltd.	Amoco Oil Co.	139,500	139,500	139,500
Sun Oil Co. Ltd.	Sun Oil Company	265,577	nil	nil
Total		3,144,077	2,565,660	2,556,582

NATIONAL ENERGY BOARD

**ANNUAL
REPORT 77**

NATIONAL ENERGY BOARD

ANNUAL REPORT
1977

Ce rapport annuel est publié séparément dans les deux langues officielles. Des copies en langue française pourront être obtenues du bureau de la division du secrétariat de l'Office national de l'énergie.

27 March, 1978

*The Honourable Alastair Gillespie, P.C.,
Minister of Energy, Mines and Resources,
Ottawa, Ontario*

Dear Sir:

In accordance with the provisions of Section 91 of the National Energy Board Act, the Revised Statutes of Canada, 1970, chapter N-6, I have the pleasure to submit the Annual Report of the National Energy Board for the year ended 31 December 1977.

Yours sincerely,

A handwritten signature in dark ink, appearing to read "J. G. Stabback". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

J. G. Stabback,
Chairman.

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The Functions and Responsibilities of the National Energy Board

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal roles: to regulate specific areas of the oil, gas and electrical utility industries in the public interest, and to advise the Government on the development and use of energy resources.

The Board on its own initiative may hold inquiries into a particular aspect of the energy situation and prepare reports for the information of the Government, of Parliament and of the general public.

The Board also carries out studies and prepares reports at the request of the Minister.

The Act requires the Board to regulate various aspects of several types of energy industry to ensure that the interests of the public are protected. The regulatory role of the Board encompasses the following fields:

Certificates of Public Convenience and Necessity

The Board grants certificates to construct or operate interprovincial and international oil, gas and petroleum products pipelines, and international electric power lines. Before permission is granted for construction, through a certificate of public convenience and necessity, the Board considers the application at a public hearing. The Board may, however, issue orders for relatively minor additions or modifications to pipeline systems without calling a public hearing. These would include sections, branches and extensions of pipeline not more than 25 miles in length, and ancillary installations such as tanks, pumps, compressors, meter stations, and communications systems. The Board may also by order authorize international power lines of transfer capacity not exceeding 5,000 kilowatts (KW).

Pipeline Utility Crossings

For reasons of safety, the protection of the environment and of other utility services, no pipeline may cross or be crossed by another utility without authorization. Where a pipeline is to cross a navigable water or a railway, leave must be obtained from the Minister of Transport or the Canadian Transport Commission

respectively. Crossings of the facilities of other utilities may only be made with the authorization of the Board. Authorization is made by Board order after consideration of all the relevant information.

Implementation of Board Decisions

When the Board is prepared to grant a pipeline or power line certificate or to issue a licence for the export of gas or electricity, the import of gas or the exportation of oil for a period exceeding one year, it so reports to the Governor in Council through the Minister of Energy, Mines and Resources. If the issuance of a certificate is approved by the Governor in Council, the certificate is issued by the Board or in an export case, if the licence already issued by the Board is approved by the Governor in Council, the licence goes into effect. When the Board refuses an application, the decision is not subject to referral to the Governor in Council. The Board's reports on these matters are issued as public documents.

Because of the special nature of the trade in crude oil and petroleum products — specifically the use of short-term contracts and the need to make decisions on a daily basis — oil export controls (except for licences for periods in excess of one year) are implemented directly by the Board without reference to the Governor in Council.

Applications for orders authorizing the export of propane and butane for periods up to one year, are also dealt with by the Board without reference to the Governor in Council.

Decisions regarding rates, tolls, and tariffs are implemented by the Board without reference to the Governor in Council.

Licences and Orders

The National Energy Board Act requires that, in considering applications for export licences, the Board take into consideration all matters that appear to it to be relevant. It must, among other things, satisfy itself that the quantities of energy involved do not exceed the surplus remaining after allowance has been

made for reasonably foreseeable Canadian requirements for that particular form of energy. The Board must also be satisfied that the prices charged for exports are just and reasonable in relation to the public interest.

Regulation of Pipeline Tolls, Tariffs, Accounting Practices

The regulation of rates, tolls and tariffs of pipeline companies under federal jurisdiction is carried out by the Board. In the establishment of fair and reasonable rates or charges for the transportation of oil and gas in a pipeline, the Board seeks to ensure that there is no unjust discrimination against any person or locality. The rates, tolls, or tariffs allowed take into consideration, among other things, the capital and operating costs of the pipeline company and the necessity for it to earn an adequate return on its investment so as to be able to attract capital as needed to maintain and extend service.

To enable the Board to reach reasonable decisions it is essential that financial information provided by all companies be complete and in a form permitting full evaluation and comparison. This is accomplished by requiring oil and gas pipeline companies under the Board's jurisdiction to use uniform accounting classifications and practices.

Safety Regulations

Pipeline safety is an important aspect of the Board's responsibilities, and high standards are reflected in its regulations and orders. On-site inspections by Board staff, particularly during periods of construction, are carried out.

Appeals of Board Decisions

The National Energy Board is a Court of Record. With regard to attendance, the swearing and examination of witnesses, the production and examination of witnesses, the production and inspection of documents, and the enforcement of its orders, it has all the powers vested in a superior court of record.

A decision or order of the Board may be appealed to the Federal Court of Appeal providing the appeal is based upon a point of law or of jurisdiction. Leave to appeal must be obtained upon application made within one month after the making of the Board's decision or order, or within such further times as that Court, under special circumstances, allows. Judgments of the Federal Court of Appeal may, with leave, be appealed to the Supreme Court of Canada. The Federal Court of Appeal also has jurisdiction to review and set aside a decision or order of the National Energy Board upon certain stipulated grounds.

The Trial Division of the Federal Court of Canada has exclusive jurisdiction to issue an injunction, writ of certiorari, writ of prohibition, writ of mandamus, or writ of quo warranto, or grant declaratory relief against any Federal Board, Commission or other tribunal.

Responsibilities under the Petroleum Administration Act

The Petroleum Administration Act, passed on 19 June, 1975, empowers the federal government to impose a charge on the export of crude oil and certain petroleum products; to provide compensation for certain petroleum costs; and to regulate the price of Canadian crude oil and natural gas in interprovincial and export trade. The Board is required to administer certain provisions of that Act.

Review of the Year

Supply and Demand

As determined by the Board's findings following a public hearing in 1976, the surplus of crude oil and equivalent hydrocarbons authorized for export in 1977 fell to an average of 282 Mb/d (Thousand barrels per day) from 470 Mb/d level of 1976. The lower level resulted in part from the increased movement of oil through Interprovincial Pipe Line Limited's new extension from Sarnia to Montreal.

Licences for export of oil during 1977 totalled 103 million barrels of crude oil and equivalent hydrocarbons and 35 million barrels of refined

petroleum products. Not all of the quantities which were licensed for export were actually shipped during the year.

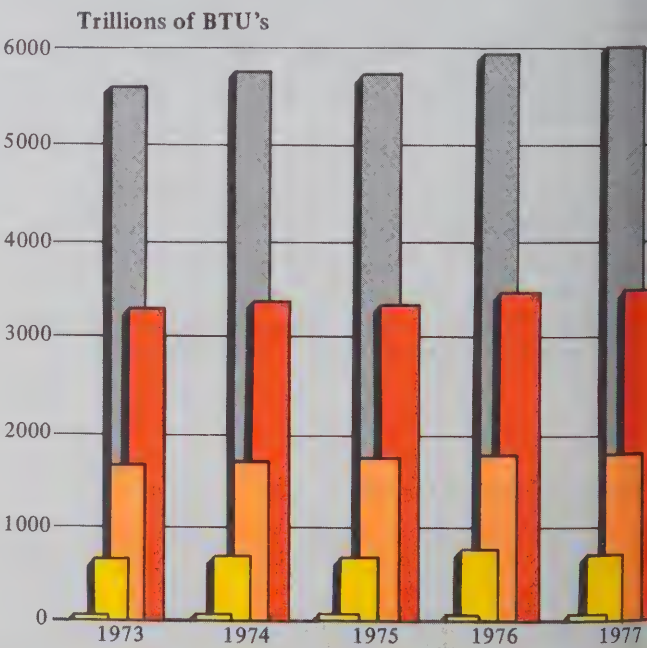
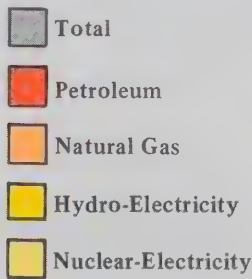
Production of marketable natural gas increased from 2459 billion cubic feet (Bcf)* in 1976 to an estimated 2577 Bcf* in 1977. Of this production, 1413 Bcf were net sales to ultimate consumers in Canada while 1,000 Bcf, or 38.8 percent, were exported to the United States. Net sales growth in Canada was 3.1 percent.

* Includes pipeline fuel and losses.

Canadian Consumption of Selected Energies

Year	1973	1974	1975	1976 ^(p)	1977 ^(e)
Petroleum	3278.3	3313.8	3307.7	3441.2	3459.7
Natural Gas	1633.4	1666.0	1714.4	1753.0	1797.9
Hydro Electricity	613.0	680.9	670.5	700.9	674.7
Nuclear Electricity	48.6	47.3	40.5	56.1	85.0
Total	5573.3	5708.0	5733.1	5951.2	6017.3

(p) preliminary (e) estimated



Consumption in all provinces changed marginally from the 1976 levels. The primary moderating factors were conservation, price increases, and the above normal temperatures in Ontario and Western Canada while the mild growth in the economy provided an upward offsetting effect. Net exports increased slightly from the 1976 volume of 954 Bcf as a result of the short term emergency exports made during the winter months to the United States.

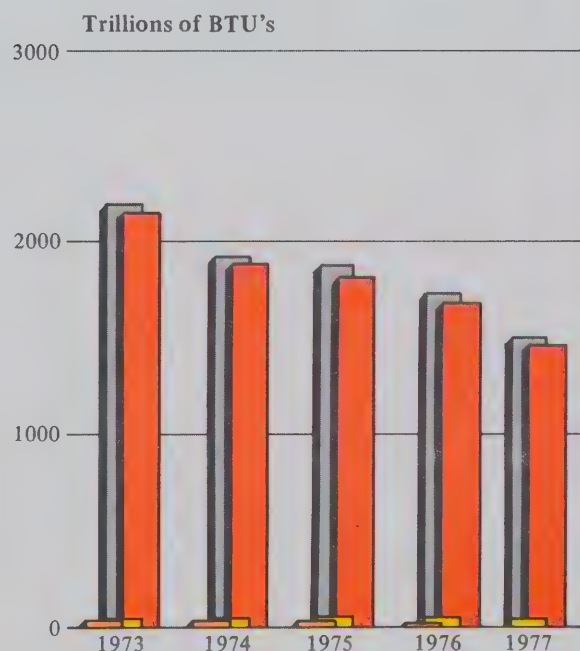
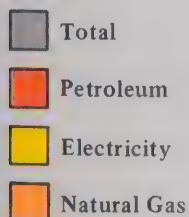
Canada's total net electrical generating capability at the end of 1977 was approximately 69,000 megawatts (MW), of which hydroelectric plants accounted for approximately 59 percent, conventional thermal stations 36 percent and nuclear power 5 percent. Total Canadian consumption of electric energy in 1977 is estimated to have been 300,000 gigawatthours (GWh), up about 6 percent from 1976.

Imports of Petroleum, Natural Gas and Electricity

Figure 2(a)

Year	1973	1974	1975	1976	1977 ^(e)
Petroleum	2152.7	1882.5	1825.1	1685.2	1468.1
Natural Gas	15.3	13.8	10.6	4.2	*
Electricity	22.5	24.4	39.9	35.9	32.5
Total	2190.5	1920.7	1875.6	1725.3	1500.6

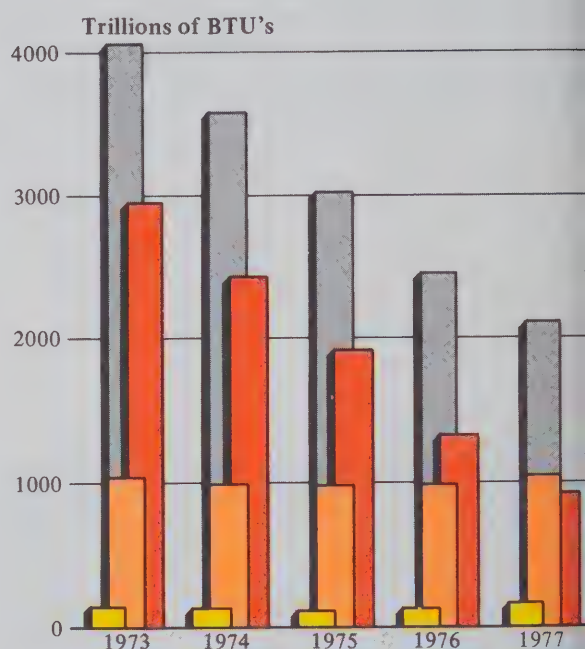
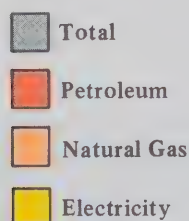
(e) estimated * less than 0.1 Trillion BTU



Exports of Petroleum, Natural Gas and Electricity

Year	1973	1974	1975	1976	1977 ^(e)
Petroleum	2956.8	2446.5	1923.0	1346.5	923.0
Natural Gas	1063.9	992.8	980.0	987.0	1035.3
Electricity	168.8	154.0	113.8	128.0	193.3
Total	4189.5	3593.3	3016.8	2461.5	2151.6

(e) estimated



Oil and Gas Reserves

The Board's estimate of established remaining reserves of crude oil as of 31 December, 1976 is 6,001 million stock tank barrels (MMstb), 473 MMstb lower than the 31 December, 1975 estimate.

Initial recoverable reserves at 31 December, 1976 were estimated at 13,883 MMstb, essentially unchanged from the 31 December, 1975 estimate of 13,895 MMstb. Lower reserves assignments were given certain pools within the Rainbow Pipe Line system, but they were offset by reserves increases for pools in the heavy oil producing areas. Production during 1976 was 461 MMstb.

TABLE

Estimated reserves of crude oil in Canada at 31 December, 1976.

	Initial	(MMstb)	Remaining
British Columbia	401		124
Alberta	11,024		5,102
Saskatchewan	2,179		686
Manitoba	158		43
Northwest Territories	60		39
Western Canada Total	13,822		5,994
Ontario	61		7
Canada Total	13,883		6,001

Note: Propane, Butane and Pentanes Plus not included.

The Board's estimate of established remaining reserves of natural gas in the conventional producing areas as of 31 December, 1976 is 61.4 trillion cubic feet (Tcf) at 1,000 British Thermal Units per cubic foot (Btu/cf), 2.4 Tcf higher than its December 31, 1975 estimate. This growth in reserves, the first recorded by the Board since 1973, is the direct result of the very substantial increase in exploratory and development drilling brought about by higher natural gas prices.

Additions to initial marketable reserves during 1976 were 4.9 Tcf, of which 4.1 Tcf were in Alberta. In British Columbia, 1.0 Tcf was added. There was no significant change in Saskatchewan. The initial marketable reserves of the Yukon and Northwest Territories excluding the Mackenzie Delta, and Arctic Islands were decreased by 0.2 Tcf in recognition of some deterioration in production performance of the Pointed Mountain field.

During 1977 the Board made public for the first time its estimate of the established reserves of the Mackenzie Delta area, and the Arctic Islands, 5.3 Tcf and 7.3 Tcf respectively at 14.73 psia (pounds per square inch absolute) and 60°F. These estimates were published in its *Reasons for Decision, Northern Pipelines*. It should be noted that the Board's criteria for determining established reserves include certain restrictions on the inclusion of reserves which may be added in known fields after further development. For this reason, its estimate for these frontier areas are not as high as those quoted by other authorities.

Published also in its *Reasons for Decision, Northern Pipelines* were the Board's forecast of reserves additions for the conventional producing areas from 1976 through 1995 (inclusive) of 29 Tcf, and forecast of ultimate potential of 120 Tcf. As is the case of its estimates of established reserves, these are quantities which the Board considers can be depended upon with a high degree of certainty. No attempt has been made to include in these forecasts natural gas from non-conventional sources, for example very low porosity reservoirs, where technologies for economic recovery have not been established.

TABLE

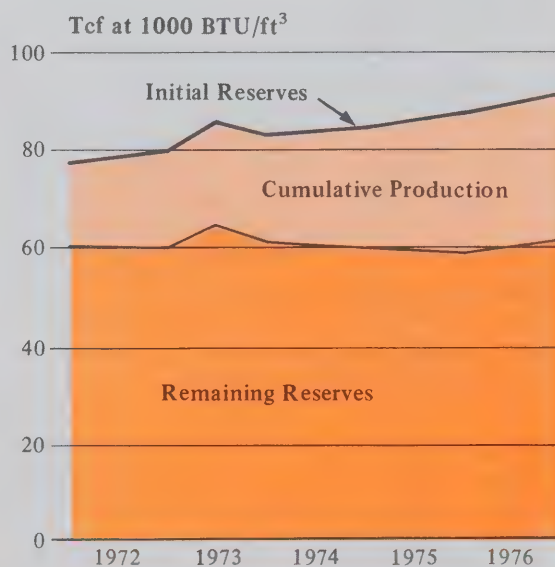
Estimate of established reserves of marketable natural gas at 31 December, 1976 (Tcf at 1,000 Btu/cf)

	Initial	Remaining
British Columbia	10.6	6.2
Alberta	77.1	53.4
Saskatchewan	1.9	1.0
Southern parts of Yukon & Northwest Territories	0.6	0.5
Western Canada Total	90.2	61.1
Ontario and other eastern Canada	1.0	0.3
Conventional producing areas Total	91.2	61.4
Mackenzie Delta	5.3*	5.3*
Arctic Islands	7.3*	7.3*
Canada Total	103.8	74.0

*heating value assumed to be 1000 Btu/cf

Figure 3

Established Reserves of Marketable Natural Gas from Conventional Producing Areas



Public Hearings

During 1977 the Board conducted all or part of 13 public hearings in the following locations: Ottawa, Winnipeg, Vancouver, Hamilton, Saint John, Fredericton, Fort St. John, Montreal and Whitehorse. The Board sat for a total of 138 days. The most significant of these hearings in terms of general public interest were:

- On 4 July 1977 the Board released its Reasons for Decision on northern gas pipelines. The public hearing had commenced in April 1976 to consider two major competing proposals by Canadian Arctic Gas Pipeline Limited and Foothills Pipe Lines Limited to build a Mackenzie Valley pipeline. The hearing was expanded in October 1976 to include consideration of a third project, Foothills (Yukon), which would move Alaska North Slope gas across the southern Yukon Territory, rather than up the Mackenzie Valley. In March 1977 this latter project was amended to a 48-inch diameter "express line" and the original 42-inch diameter pipeline proposal was withdrawn.

In its Reasons for Decision the Board recommended approval of the Foothills (Yukon) 48-inch diameter pipeline project to transport Alaska gas through Canada to the lower 48 States. The Board found that a pipeline to transport Mackenzie Delta gas to Canadian markets would be needed during the first half of the 1980's and recommended that Foothills (Yukon) be required to conduct feasibility studies with respect to the construction of a pipeline (the Dempster link) connecting Delta gas to the Foothills (Yukon) line and to apply to the Board by 1 July 1979 for a certificate to construct the Dempster link.

The Board's findings are set forth in detail in its three-volume report entitled *Reasons for Decision, Northern Pipelines* available from Supply and Services Canada and from bookstores.

An agreement on the Northern Gas Pipeline was signed by Canada and the United States on 20 September 1977 and discussions are continuing between the two governments on the design and construction of the pipeline.

- A joint hearing of the applications of the following companies was held relating to facilities near Saint John, New Brunswick: Tenneco LNG applied to import liquefied natural gas (LNG) and to export natural gas; Lorneterm LNG Limited applied to construct and operate unloading, storage and regasification facilities; TransCanada PipeLines (New Brunswick) Limited to construct and operate pipeline facilities; and Canadian Lowell Gas Ltd. to import LNG and to export LNG and natural gas. The Tenneco, Lorneterm and TransCanada applications were approved. The Canadian Lowell application was denied.
- Manitoba Hydro applied to construct and operate a 500 kilovolt (kV) power line of approximately 130 miles in length from the Dorsey substation near Winnipeg to a point on the international border near Sprague, Manitoba, and to export power and energy. The application was approved.
- A hearing respecting tariffs and tolls charged by Interprovincial Pipe Line Limited which commenced in 1976, continued in 1977 and Part II was completed in November 1977. This part determined Interprovincial's rate base, cost of service and rate of return and resulted in the Company being ordered to file with the Board tariffs and tolls to recover its revenue requirements.
- A joint hearing of applications by Interprovincial Pipe Line Limited and Trans-Northern Pipe Line Company was held. Interprovincial applied to construct a 16-inch crude oil pipeline extension of approximately 26 miles in length from Mount Hope, Ontario to the new Texaco refinery at Nanticoke, Ontario. Trans-Northern applied to construct a 16-inch oil products pipeline extension of approximately 36.5 miles in length from Texaco's Nanticoke refinery to Hamilton, Ontario. The applications were approved.

In 1977 the Board issued a total of 2,368 certificates, licences, orders and authorizations. There included eight certificates of public convenience and necessity; 980 licences and orders for the export or import of gas, oil, refined hydrocarbons and power; 29 orders exempting certain pipeline and power facilities from certain requirements of the Act; 215 orders approving

plans, profiles and books of reference for new pipelines or portions thereof, as well as deviations and replacements of existing pipelines; 18 orders approving plans for compressor, pump and meter stations; 69 orders granting "leave to open" oil or gas pipeline facilities; mine orders authorizing the operation of existing pipeline facilities at operating pressures higher than those previously permitted; three orders approving the sale, conveyance, purchase, lease or assignment of parts of pipeline or power facilities; seven orders granting leave to abandon the operation of pipeline or power facilities; and 703 orders relating to the crossing of and by pipelines with regard to other utilities, highways and railways.

The total number of orders issued increased significantly over the number issued during 1976. The complexity and variety of the applications handled by the Board continue to increase steadily. The annual totals of certificates, licences, orders and authorizations which the Board has issued since its inception are shown in Appendix S-II.

Generally speaking, these certificates, licences, orders and authorizations relate to the protection of the public and of pipeline facilities and to safety in pipeline operation, as well as the control of the export of gas, oil, refined hydrocarbons and power.

The capital expenditures relating to the 1977 construction of pipelines and power transmission facilities under the Board's jurisdiction are summarized in Appendices G-I, O-I and E-I.

litigation

On 4 July, 1977, the Board issued its Reasons for Decision on the various applications respecting Northern Pipelines, in which the Board decided to issue, subject to the approval of the Governor in Council, Certificates of Public Convenience and Necessity in respect of the Foothills (Yukon) Project, upon the terms and conditions set out in that decision. The public hearing of the Northern Pipeline applications commenced on 12 April, 1976, and concluded on 12 May, 1977. The hearing of the Northern Pipeline applications has resulted in various applications to the Federal Court of Canada.

By an application filed on 13 October, 1976, in the Federal Court of Canada, William and Tabitha Smith of Old Crow, Yukon, applied under section 18 of the Federal Court Act for a writ of prohibition to restrain the Board from proceeding with the Northern Pipeline hearings. Her Majesty the Queen, Canadian Arctic Gas Pipeline Limited, Foothills Pipe Lines Ltd. and the Board are named as defendants in the application. The Smiths seek a writ of prohibition on the grounds that the National Energy Board Act did not receive proper Royal Assent, and that the Board failed to give proper consideration to the Smiths' objections to the pipeline applications as required by section 45 of the National Energy Board Act.

On 12 May, 1977, the Smiths filed an application with the Federal Court of Appeal, under section 28 of the Federal Court Act, for judicial review of the Board's Order No. MO-12-77, made on 21 April, 1977. This Order provided that the Smiths were not interested persons under section 45 of the National Energy Board Act for the purposes of the Northern Pipeline hearing. On 8 August, 1977, the Smiths filed a second application for judicial review under section 28 of the Federal Court Act. In this application, the Smiths seek judicial review of the Board's Northern Pipeline Decision of 4 July, 1977, upon the same grounds as the earlier application in relation to Order No. MO-12-77. Both section 28 applications name the Attorney General of Canada, as representing the National Energy Board, as the respondent. All three proceedings commenced by the Smiths are pending in the Federal Court of Canada.

On 25 May, 1977, Robert G. McCandless of Marsh Lake, Yukon, applied to the Federal Court of Appeal, under section 18 of the National Energy Board Act, for leave to appeal certain decisions taken by the Board during the course of the Northern Pipeline hearing. In this application, it was alleged that the Board erred in law in proceeding to consider the various facilities applications, without concurrently hearing an application to import natural gas into Canada under Part VI of the National Energy Board Act. It was also alleged that the Board failed to exercise its jurisdiction in not requiring the various applicants to the Board to file gas supply contracts evidencing the existence of a supply of gas to the

proposed pipelines. The Federal Court of Appeal dismissed the application for leave to appeal on 8 June, 1977. The Court held that the application did not disclose any serious grounds for challenging the validity of the Board's decisions.

The Yukon Conservation Society applied to the Federal Court of Appeal on 2 August, 1977, for leave to appeal the Board's Northern Pipeline Decision under section 18 of the National Energy Board Act. The application alleges that the Board exceeded its jurisdiction and breached the rules of natural justice in approving the issue of a certificate for a pipeline route which had not been formally requested by any of the applicants to the Board, and in not giving notice to the Yukon Conservation Society and others that the Board was considering such a pipeline route. The application also alleges that the Board exceeded its jurisdiction by adjudicating upon the Northern Pipeline applications without having before it all the information required by the Schedule to the National Energy Board Rules of Practice and Procedure, and by conditioning its decision to require Foothills Pipe Lines (Yukon) Ltd. to apply to the Board by 1 July, 1979, for a certificate under section 44 of the National Energy Board Act for a pipeline along the route of the Dempster Highway.

On 4 August, 1977, the Council of Yukon Indians applied to the Federal Court of Appeal for leave to appeal, under section 18 of the National Energy Board Act, the Northern Pipeline Decision on grounds identical to those raised by the Yukon Conservation Society. On 12 August, 1977, the Federal Court ordered that the two applications be joined together in one action. The joint application for leave to appeal will be heard by the Federal Court of Appeal early in 1978.

The Board has also been involved in litigation in 1977 as a result of three other matters dealt with by the Board in 1976 and 1977.

On December 7 and 8, 1976, the Federal Court of Appeal heard an appeal under section 18 of the National Energy Board Act and an application for judicial review under section 28 of the Federal Court Act brought by Saskatchewan Power Corporation and Many Islands Pipe Lines Limited. These

proceedings relate to a decision by the Board in April, 1976, in which the Board found that a contract between the two applicant companies and TransCanada PipeLines Limited dated 1 November, 1969, was a contract required to be filed with the Board under section 51 (2) of the National Energy Board Act, and that the sale of gas by TransCanada pursuant to the contract was subject to the Board's regulation of tolls and tariffs under Part IV of the Act. In the Federal Court proceedings, it was alleged that Part IV of the National Energy Board Act had no application to the contract and, alternatively, if it did, sections 50 and 51 were *ultra vires* the Parliament of Canada in that they extended to matters relating exclusively to property and civil rights within a province. On 23 February, 1977, the Federal Court of Appeal held that the contract was one within section 51 (2) of the Act, and that sections 50 and 51 of the National Energy Board Act were valid legislation in relation to inter-provincial pipelines, with the result that the appeal was dismissed. The section 28 application for judicial review was dismissed on the basis of section 29 of the Federal Court Act.

On 17 May, 1977, the Supreme Court of Canada granted leave to appeal the decision of the Federal Court of Appeal. This appeal will be heard by the Supreme Court of Canada in the spring of 1978.

In December, 1976, the Board issued its decision in an application by TransCanada PipeLines Limited in respect of its tolls and tariffs under Part IV of the National Energy Board Act. As part of its decision, the Board disallowed the sale price of gas under the contract of 1 November, 1969, for gas sold by TransCanada to Saskatchewan Power Corporation and Many Islands Pipe Lines Limited, and substituted for that price the Saskatchewan CD Zone rate determined by the Board. On 11 May, 1977, Saskatchewan Power Corporation and Many Islands Pipe Lines Limited applied to the Federal Court of Appeal for leave to appeal the Board's decision and an extension of time for filing that application under section 18 of the National Energy Board Act. The application was based in part on the same grounds as the appeal of the Board's April, 1976, decision in relation to the same contract, and also raised questions as to the

Board's jurisdiction to vary the price stipulated in a contract for the sale of gas transported through an interprovincial pipeline. On 24 June, 1977, the Federal Court of Appeal granted an extension of time and leave to appeal the Board's December, 1976, decision. It is anticipated this appeal will be heard in the first half of 1978.

On 21 September, 1976, the Board commenced a public hearing on its own motion to inquire into the justness and reasonableness of the tolls charged by Interprovincial Pipe Line Limited. By Order No. PO-5-RH-2-76 dated 10 February, 1977, the Board ordered Interprovincial to file certain information respecting the finances and operations of Lakehead Pipe Line Company Inc., an American subsidiary of Interprovincial. Lakehead operates a pipeline system in the United States which connects Interprovincial's pipeline facilities in Western Canada with those of the company in Ontario. For the movement of oil from Western Canada to Ontario and Quebec, Interprovincial charged tolls in conjunction with Lakehead under the provisions of a joint tariff. On 4 March, 1977, Interprovincial applied under section 18 of the National Energy Board Act for leave to appeal Order No. PO-5-RH-2-76 on various questions relating to the Board's jurisdiction, particularly in relation to joint tariffs. On 10 May, 1977, the Federal Court of Appeal granted leave to Interprovincial to appeal solely in respect of the following question:

"That the National Energy Board erred in law and exceeded its jurisdiction in requiring the applicant to file financial information not already in existence related to the operation of Lakehead Pipeline Company Incorporated."

On 17 August, 1977, the Federal Court of Appeal dismissed the appeal by Interprovincial. In its judgement, the Court held that the Board has the authority, under the National Energy Board Act, to order the preparation and filing of information in a documentary form that is not already in existence.

An application by Interprovincial to the Supreme Court of Canada for leave to appeal the judgement of the Federal Court of Appeal was dismissed by the Supreme Court on 5 October, 1977.

On 15 November, 1977, the Board commenced a hearing in Fort St. John, British Columbia, on two applications by Westcoast Transmission Company Limited for certificates under section 44 of the National Energy Board Act in relation to two pipelines proposed to be constructed in northeastern British Columbia. At the opening of the hearing, the Union of British Columbia Indian Chiefs requested an adjournment of the hearing, which request was denied by the Presiding Member. On 18 November, 1977, the Union applied to the Federal Court under section 18 of the Federal Court Act for a writ of prohibition, with certiorari in aid, to restrain the Board from continuing with its proceedings on these applications and to quash the proceedings to date. On 7 December, 1977, the Trial Division of the Federal Court dismissed the Union's application. The Court held, on the facts of the case, that adequate notice of the hearing had been given to the Union and that the refusal of an adjournment was not tainted with unfairness or denial of natural justice. On 12 December, 1977, the Union appealed the Court's judgement to the Federal Court of Appeal, and it is expected that the hearing of this appeal will proceed early in 1978.

Membership of the Board

Mr. Marshall A. Crowe, Chairman of the Board since October 1973, resigned effective 31 December 1977.

Mr. Crowe joined the Department of External Affairs in 1947, and served until 1961 in a number of posts in Ottawa and abroad, including periods as deputy head of the Economic Division in Ottawa and as counsellor at the Canadian Embassy in Moscow.

He became Assistant Secretary to the Cabinet, Economic Policy, in 1967, following six years as economic adviser with the Canadian Imperial Bank of Commerce. He became Deputy Secretary to the Cabinet, Operations, in 1969 and was appointed Director and first President of the Canada Development Corporation in November of 1971.



In December the Prime Minister announced the appointment of Mr. Jack G. Stabback, Vice-Chairman of the Board, to succeed Mr. Crowe as Chairman effective 1 January 1978.

Mr. Stabback joined the Board as Chief Engineer in 1964, was appointed as a Member in 1968, became Associate Vice-Chairman in 1974 and Vice-Chairman in 1976.

He had previously been with the Oil and Gas Conservation Board of Alberta from 1949 to 1964. In 1964, Mr. Stabback also served as Technical Advisor to the Government of South Australia in evaluating the original occurrence of gas in that state. He is a member of the Association of Professional Engineers of Ontario.

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Mr. Alphonse Cossette Trudel, a Member of the Board since 1970, retired at the end of the year. Prior to his appointment to the Board he had been, for 25 years, with the Electricity and Gas Board of Quebec, first as a Commissioner and for the last 13 years as Vice-Chairman.

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Mrs. Livia Marie Thur was appointed Member and Associate Vice-Chairman of the Board in March 1977. Prior to her appointment to the Board, her positions had included Research Assistant at the Institute of Economic and Social Research of the Université de Louvain; Assistant Professor and then Associate Professor in the Department of Economics of the Université de Montréal; Vice-Principal, Academic, at the Université du Québec; Senior Assistant Secretary at the Ministry of State for Science and Technology; Member, Board and Executive Committee Université de Montréal; Member, Superior Council of Education of Quebec; Member, Science Council of Canada; Past President, French Canadian Association for the Advancement of Sciences; Canadian Delegate at

UNESCO; Member, Board of Directors, Bell Canada; Member, Board of Directors, Canada Development Corporation; Member, Board of Directors Sidbec and Sidbec-Dosco Ltd.

At the end of 1977, the Board was two members short of its authorized complement of nine.

Budget and Personnel

For the fiscal year 1977-78, the Board's budget is \$11,432,000 with a man-year allocation of 362. During 1976-77 the budget was \$9,713,000 with 336 man-years.

Official Languages Act

The Board has continued its efforts to improve its capability to provide service in both official languages, and to promote the use of both official languages in its internal organization. During the year, 24 employees of the Board began or continued language training.

Metric Conversion

In 1977, sections of both the National Energy Board Act and the Petroleum Administration Act were updated to accommodate metric changes and submitted to the Department of Justice. These changes are included in the second in a series of five Omnibus Bills which were established to facilitate the metric conversion of government legislation. Changes to regulations under these two Acts were also drafted in 1977 and will be finalized during 1978. During 1978, the National Energy Board will accept submissions in either Imperial or SI (Système International) units. All measurement of hydrocarbons starting 1 January, 1979 will be required to be expressed in SI. Oil will be reported in cubic metres at a reference temperature of 15°C. Gas will be reported by volume in cubic metres at reference conditions of 15°C and 101.325 kilopascals (absolute), (kPa) and by heat quantities in joules on a dry basis. The Board expects that submissions involving pipelines will also be SI, although certain historical information may remain in the Imperial system.

Workshop on Alternative Energy Strategies (WAES)

The Board participated actively in the Workshop on Alternative Energy Strategies (WAES) over the last two and a half years. WAES was created in 1974 to formulate different energy strategies to serve as possible energy alternatives for the future. Representatives from fifteen countries in the non-communist world, representing about 80 percent of the world's energy consumption, participated in WAES. The WAES Report, "Energy – Global Prospects 1985-2000", issued in May of 1977, included significant contributions made by the Board.

Exploration & Development Activity — Oil & Gas

In 1977, exploratory drilling activity in the Western provinces again was substantially above that of the preceding year. Approximately 2,700 wells were drilled compared with less than 2,400 in 1976 and approximately 1,600 in 1975.

Preliminary estimates indicated that some 3,200 development wells were drilled in the Western provinces, a slight increase over 1976.

In the frontier areas, drilling activity declined for the fourth consecutive year. Twenty-seven exploratory and development wells were drilled in the Mackenzie Delta area, the Beaufort Sea, the Arctic Islands and in waters off the Atlantic coast compared with 38 in 1976.

There were 77 geophysical crews operating in the Western provinces at year-end compared with only 46 a year earlier, indicating that the high level of exploratory drilling experienced in 1977 can be expected to continue.

The following is a summary of significant activity during the year. LOCATIONS ARE IDENTIFIED ON THE ACCOMPANYING MAP.

Alberta

While drilling activity in Alberta has been scattered generally throughout the province, there has been decided emphasis on the prospects of the heretofore less intensively explored "deep plains" belt east of, and parallel to, the Rocky Mountain foothills. Activity has been concentrated in an area extending northwestward from approximately the latitude of the Pembina oil field southwest of Edmonton to the British Columbia border west of Grande Prairie. Discoveries have been reported at a number of locations, but developments in two areas, West Pembina (1) and Elmworth-Wapiti (2), are particularly noteworthy. Early in the year a well, Nairb Pembina A 11-22, located immediately west of Cardium sandstone production in the Pembina field, discovered oil in the Devonian Nisku formation, precipitating a high level of land and drilling activity in the area. Production is being obtained from reef

bodies reported to be of the pinnacle type. It may take an extended period of drilling activity before the full significance of this development can be appreciated, however, the potential appears to exist for substantial additions to reserves. To year-end 10 wells had been reported as discoveries, seven oil, one oil and gas, and two gas. One of the gas wells made headlines when it blew out of control for almost a month. The productive trend thus far defined is more than 20 miles long and 10 miles wide.

In the Elmworth-Wapiti area, centered some 25 miles south-west of Grande Prairie, approximately 20 wells were drilled during the year searching for gas in sandstone reservoirs, primarily of Cretaceous age. This play encompasses a trend 80 miles long from the Gold Creek gas field northwest to the British Columbia border west of Grande Prairie. There are currently some 16 wells active and an additional 13 locations licensed.

There continued to be extensive exploration for and development of shallow gas reservoirs in northern and eastern Alberta, in particular in the Keg River, Bassett, Boyer, Bede, Negus and Parma areas (3), the Leismer area (4) and the Suffield and Medicine Hat areas (5). The Chigwell area in central Alberta (6) experienced an active oil development program as did the Lloydminster and Wainwright areas (7) in the heavy oil region in the eastern part of the province.

British Columbia

In British Columbia the regions of drilling activity included the Grizzly-Sukunka (8) and Silver-Dahl (9) areas, recently involved in gas pipeline applications before the Board, and the Helmet area (10), now served by a gas pipeline approved for construction by the Board in 1975. In addition, there was extensive development of gas reserves in the Buick Creek (11) and Boundary Lake (12) areas. Increased net-backs to gas producers effective late in 1977 are expected to further stimulate drilling activity in 1978.

Figure 4

Oil and Gas Developments



Saskatchewan

Shell Oil made an interesting oil discovery in southern Saskatchewan, at Torquay (13) six miles south of the Weyburn oil field. Areas which experienced active development during 1977 included Hatton and Liebenthal (14) in the southwestern part of the province, for gas, and Tangleflags, Dodsland, Freemont, Golden Lake, Buffalo Coulee and Senlac (15) in the west-central sector, for oil.

Yukon Territory

In the Yukon Territory, immediately north of the British Columbia boundary, Columbia Gas et al Kotaneelee H-38 (16) discovered gas in the Devonian Nahanni formation. This well is located in close proximity to the Westcoast pipeline system carrying gas from the Pointed Mountain field, which is productive from the same formation. Follow-up drilling is scheduled for 1978.

Mackenzie Delta

In the Mackenzie Delta area (17), 15 wells were drilled during the year, with five productive of natural gas and the balance dry. The productive wells either penetrated previously discovered reservoirs, or encountered new pools in close proximity to these. None would appear to qualify as major discoveries. Two wells were drilling at year-end and one new location had been announced.

Beaufort Sea

The results of exploratory drilling by the Dome Petroleum group in the Beaufort Sea during the year were extremely encouraging. Three wells were carried to depths adequate to evaluate a significant portion of the sedimentary section. Dome Hunt Nektoralik K-59 (18), some 70 miles offshore, drilled to 9,154 feet, flowed oil at the rate of 1,150 barrels daily from a zone at about 8,900 feet. This well also encountered zones productive of natural gas. Dome Gulf et al Ukalerk C-50 (19), 25 miles offshore, was tested at approximately 6,700 feet and yielded gas at 16.9 million cubic feet a day (MMcf/day). This well reached 7,561 feet. The third well, Hunt Dome Kopanoar M-13 (20), 50 miles from the coast, drilled to 9,164 feet, was not tested, but is reported to have had shows of hydrocarbons. Detailed information on these wells has not been made public, and it must be

emphasized that further evaluation of the reservoirs encountered, including development drilling, will be necessary before their true significance can be demonstrated.

Arctic Islands

In the Arctic Islands seven wells were drilled. All were non-productive. Included in the total are two tests on Cameron Island (21) located in proximity to the Bent Horn Oil reservoir, and two on Melville Island, drilled in anticipation of developing the Drake Point and Hecla gas fields respectively. At year-end there were three wells drilling, Panarctic et al Richardson Point (22) and Panarctic et al Beverley Inlet (23), both on Melville Island, and Hudson's Bay et al Cape Allison (24) on Ellef Ringnes Island.

East Coast Offshore

Two wells were drilled during the year off the East Coast; both were abandoned. A third well drilling at the end of the year subsequently proved to be non-productive also. These tests were all located on the Scotian Shelf (25).

On the Labrador Shelf (26) all exploratory work remained suspended pending resolution of federal/provincial jurisdictional uncertainties.

Operations Review

OIL AND PETROLEUM PRODUCTS

Many operations in the Canadian oil industry, such as exports, imports, crude production and supply of refined products in general, exhibited declines in 1977 or else increased only marginally. A substantial increase in refinery crude runs averaging some 112 thousand barrels daily (Mb/d) over the year was largely absorbed in the replenishment of refined product inventories. The severe weather conditions of late 1976 and early 1977 resulted in a temporary surge in Canadian demand for heating fuels; the Board authorised a total of more than 3 million barrels of additional exports of crude oil and refined products to meet emergency conditions in specific areas of the United States.

Several changes occurred in crude oil prices in 1977. The domestic price of crude oil was increased by \$0.70 per barrel effective 1 January, 1977 and \$1.00 per barrel effective 1 July, 1977. These changes brought the average wellhead price of Alberta crude oil to \$10.75 per barrel in the last half of 1977. A further increase of \$1.00 became effective 1 January, 1978.

Export charges for crude oil for 1977 are shown in Appendix O-V. Despite increases in the price of crude oil in Canada, the decrease in the value of the Canadian dollar in relation to foreign currencies and increases in imported crude oil prices resulted in the per barrel export charge level for light and medium crude oil increasing over the year from \$4.60 to \$5.15.

Crude Oil Supply, Requirements and Exports

In 1977 an estimated average of 1440 Mb/d of crude oil and equivalent hydrocarbons was produced in Canada out of an average productive capacity of 1862 Mb/d. This volume compares with 1437 Mb/d for 1976. Imports of crude oil and equivalent for 1977 were 650 Mb/d compared to 755 Mb/d for 1976. Requirements in Canada for crude oil and equivalent totalled an estimated 1813 Mb/d in 1977 and 1706 Mb/d in 1976. In addition to 55 Mb/d of exchange oil from the United States, 1,119 Mb/d of crude oil and equivalent produced in Western Canada was used by Canadian refiners in Quebec, Ontario and

Western Canada. Of this 230 Mb/d was shipped to Quebec on Interprovincial Pipe Line Limited's Montreal extension. The Petrosar refinery in Sarnia came on stream as a major new market for western crude.

Exports of crude oil and equivalent for 1977 were 270 Mb/d, down from 1976 exports of 465 Mb/d. The reduction of export levels occurred entirely in the light crude oil category.

In 1977 production of heavy crude oil increased from an estimated 157 Mb/d to 196 Mb/d reflecting increases in domestic requirements and export sales. Exports of heavy crude oil increased largely as a result of the Board's action effective 1 January, 1977 to amend its allocation procedures.

Exchanges of crude oil between U.S. and Canadian refiners continued and increased. Total export of oil under exchange in 1977 was 55 Mb/d compared to 17 Mb/d in 1976. This oil was shipped under 14 approved exchange arrangements to U.S. refiners mainly in U.S. Northern Tier states and assisted in alleviating their supply problems. A change was made to exchange provisions which now allow U.S. companies to replace Canadian oil exports with off-shore crude oil as well as U.S. domestic crude oil. This change made it easier for companies to complete exchange arrangements.

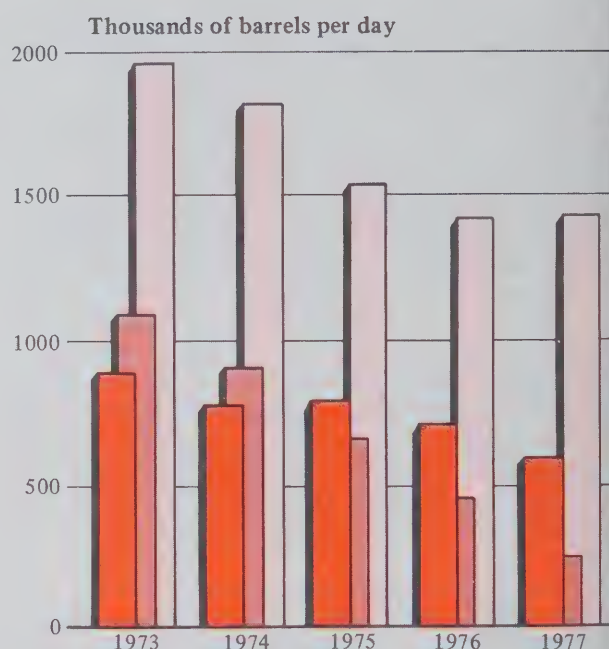
Imported oil continued to be readily available and prices in the international market rose moderately. Imports of crude oil and equivalent into Canada decreased to an estimated level of 650 Mb/d compared with 755 Mb/d in 1976, a reflection in part of the increased shipments of Western Canadian oil by pipeline to Montreal.

Figure 5

Crude Oil and Equivalent Hydrocarbons Production, Imports and Exports 1973 to 1977

Year	1973	1974	1975	1976	1977 ^(e)
Imports	897.4	797.6	817.1	755.3	649.8
Exports	1138.6	910.9	707.4	465.1	270.0
Canadian Production	1963.0	1843.3	1576.1	1437.3	1440.2

(e) estimated



Refined Products Demand

Based on preliminary operating data, demand in Canada for refined petroleum products during 1977 was slightly higher than in 1976; namely 1,695 Mb/d, an increase of 21 Mb/d or 1.2 percent. There were, as usual, large variations in demand as between products and regions. Demand for motor gasoline grew at 2.6 percent while heavy fuel oil demand grew by 3.8 percent. This relatively large increase for heavy fuel oil requirements was attributable to substantially increased use by electric utilities in the Atlantic regions and Ontario and by a few large industrial accounts in Ontario. The demand for heating oil, adjusted for weather variation, declined by 4.5 percent, reflecting conservation efforts.

Refined Products Supply

Refinery crude runs averaged 1,820 Mb/d in 1977, 112 Mb/d more than in 1976. The resulting increase in refined product supply was used to meet increased demands (21 Mb/d), to replenish product inventories which had been significantly drawn down during the severely cold fourth quarter of 1976 and to increase the levels of licensed refined product exports to 74 Mb/d from the 1976 level of 63 Mb/d. Refined product imports at 43 Mb/d were 5 Mb/d higher than in 1976.

1977 saw the start-up of Petrosar's new refinery at Sarnia; this 170 Mb/d facility while designed primarily for the manufacture of petrochemical feedstocks, is capable of providing a full range of refined petroleum products.

Oil Pipeline Construction

The most significant items were as follows:

- Interprovincial Pipe Line Limited completed construction in the Spring of 1976 of the 520-mile pipeline extension from Sarnia, Ontario to Montreal, Quebec. However, due to the presence of anomalies in the pipe, Interprovincial undertook to locate these defects and initiated a repair program. As a safety measure, the Board, at that time, restricted the maximum operating pressure to 50 percent of what would have otherwise been allowed. Interprovincial's repair program is near completion and the Board has permitted Interprovincial to increase its maximum operating pressure to 65 percent over the whole extension.
- Because of the increased proportion of high vapour pressure petroleum products being transmitted in its line No. 1, Interprovincial was ordered by the Board to retest those sections of its original Line #1 from Edmonton, Alberta to Regina, Saskatchewan. These retests were successfully carried out.
- Interprovincial filed a Class "B" application with the Board to replace its present installed diesel units at Glenavon, Saskatchewan Pump Station with an electric unit. The Board approved this application.
- Both Interprovincial and Trans Northern Pipe Line Company filed a joint Class "A" application with the Board to construct respectively one crude oil pipeline to and one products pipeline from the Nanticoke Texaco refinery. Each Company proposed to install a 16-inch pipeline which would be located in a common right-of-way in a common ditch. The Board approved this application on 15 September, 1977. Construction work on the dual pipeline system commenced in September 1977 with the completion of the project scheduled for December 1977. Board inspectors monitored this construction.
- Cochin Pipe Line Ltd. commenced construction in the Spring of 1977. Work has progressed smoothly except for minor problems which were overcome. Final hydrostatic testing was scheduled for late 1977. Board inspectors were present during all phases of construction.

- Yukon Pipe Line Company filed an application with the Board to increase its present operating pressure from 1200 pounds per square inch gravity (psig), to 1440 psig. The Board investigated this matter and concluded that Yukon would have to complete further repairs to its system before the application could be fully considered.
- Murphy Oil Company Limited's application to extend its Kerrobert to Dulwich, Saskatchewan system to Blackfoot, Alberta was approved. The Company has successfully constructed and tested this section of pipeline and the Board has issued the necessary Leave to Open orders.

Applications:

Kitimat Pipeline

Kitimat Pipeline Company, composed of a consortium of Canadian pipeline companies and northern United States refiners, has been studying alternative methods of supplying Alaskan and offshore crude oil to U.S. Northern Tier refiners that are heavily dependent on this crude. The consortium consisted of Ashland Oil Canada Limited, Farmer's Union Central Exchange Incorporated, Hudson's Bay Oil and Gas Company Limited, Interprovincial Pipe Line Limited, Koch Industries, Inc., and Murphy Oil Corporation. An application for a certificate of public convenience and necessity for a pipeline system from Kitimat, British Columbia, to Edmonton, Alberta was filed on 8 December, 1976. Under this proposal, Alaskan and offshore crude oil, arriving by tanker at Kitimat and pumped to Edmonton, would be trans-shipped through Interprovincial Pipe Line facilities to the Northern Tier refiners in the United States. On 1 June, 1977, Kitimat requested that the Board place its application in abeyance pending consideration by the Board of a competing application by Trans Mountain. (see below)

Trans Mountain subsequently requested that consideration of its application be suspended. At year end it was expected that Kitimat would reactivate its application to the Board and this occurred early in 1978.

Trans Mountain Pipe Line Application

Trans Mountain filed an application with the Board whereby the present system would be altered so that it could be "Yo-Yo'd" back and forth in order to permit both the movement of Alaskan crude oil from Cherry Point, Washington into interconnecting facilities at Edmonton deliveries of Alberta crude oil into Vancouver to meet the British Columbia requirement. The Alaskan crude oil would then be trans-shipped by Interprovincial to the Mid-West Refineries. As mentioned earlier, Trans Mountain has requested that consideration of this application be suspended for the time being.

Dome NGL Pipe Line Limited Application

Dome NGL Pipeline Limited filed a Class "A" application to recondition for use an inactive pipeline. At present, the Board has this application under review.

Oil Pipeline Regulations

Regulations governing the safe transportation of crude oil and petroleum products have been formulated and are presently being reviewed by the Department of Justice with a view to issuing them in 1978.

NATURAL GAS

1977 has been a year of increased activity in the Canadian gas industry. Despite only marginal increases in consumption in Canada and in exports to the United States over the previous year, higher producer revenues, generated by an increase in both domestic and export gas prices, provided additional incentive to the industry to expand exploration and drilling activity in the conventional producing areas. This resulted in further improvement to the natural gas supply situation in both British Columbia and in Alberta in 1977.

Natural Gas Production and Consumption

Production of marketable natural gas in Canada in 1977 increased by 118.2 Bcf over 1976 levels. Canadian demand increased at a slower rate, 71.5 Bcf,

reflecting only a marginal increase over the relatively constant demand experienced in the previous two years. The Province of Alberta recorded the greatest sales increase over the previous year, up 13.9 percent compared to an increase in the national average of 3.1 percent.

For Canada as a whole, residential and commercial sales in 1977 remained approximately equal to those experienced in 1976, which reflected a decrease in growth rate from the 4.5 percent increase in residential sales and the 3.4 percent increase in commercial sales of a year earlier. However the consumption of natural gas by industrial customers, comprising the largest market share, increased by 9.9 percent above 1976, compared with a growth of three percent established in 1976 over the previous year.

Domestic Natural Gas Pricing

The Board was assigned responsibility for the administration of domestic natural gas pricing in 1975, with the enactment of the Petroleum Administration Act (P.A.A.). Domestic natural gas prices are established under Part III of the P.A.A. which provides authority for the Government to achieve a uniform price, exclusive of transportation and service costs, for gas sold for consumption in Canada outside of its province of production, and provides the Government with a mechanism whereby the prices of gas and petroleum fuels in Canada can be kept in a reasonably balanced relationship. The Act is also intended to help achieve a balance between the interests of consumers and producers in Canada, while encouraging the development and production of natural gas.

Under the Act, the Minister of Energy, Mines and Resources may enter into an agreement with the government of a producer-province to establish prices for natural gas produced in that province. Such an agreement, between the federal government and the government of Alberta, was concluded in October 1975 and was subsequently amended in June 1976 and July 1977. The last amendment to the agreement provided for the pricing of natural gas to be based upon a Toronto city-gate reference price of \$1.68 per million British thermal units (MMBtu) from 1 August, 1977 to 31 January, 1978 and a Toronto city-gate

reference price of \$1.85 per MMBtu effective 1 February, 1978. A million British thermal units is approximately equivalent to one thousand cubic feet (Mcf) of natural gas. These reference prices are approximately 85 percent of the Btu equivalent value of the crude oil price delivered at Toronto. All other prices for natural gas sold in interprovincial trade are derived from the reference price based on transportation tolls determined by the NEB.

During 1977 the Board continued to exercise its responsibility for administering the provisions of Part III of the Petroleum Administration Act with regard to the pricing of domestic natural gas. This responsibility involves the prohibition of the sale of

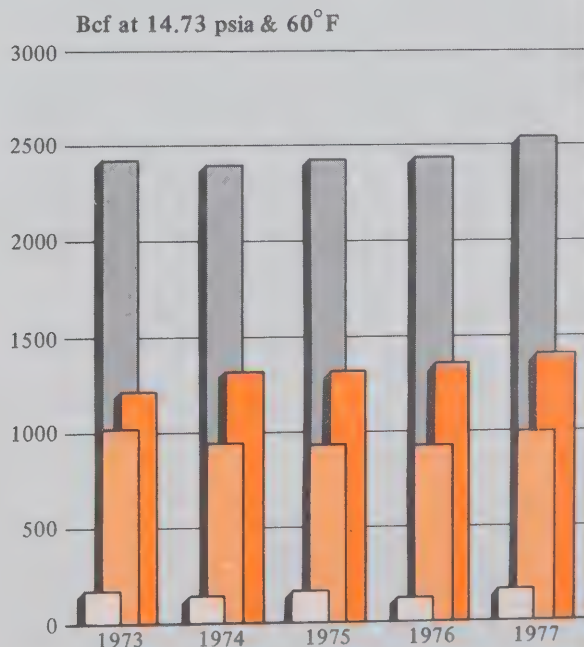
gas outside its province of production unless the price paid is a price prescribed under the Regulations of the Act, and involves the prohibition of the purchase or sale of gas within a producer-province destined for consumption outside of that province or the movement of any gas outside its province of production unless the price paid is a price approved by special or general orders of the Board. The Board approved 42 special and general orders in 1977, coordinating such approvals closely with the Alberta Petroleum Marketing Commission which carries out similar functions to the Board with respect to the administration of gas pricing within Alberta, reflecting the cooperation required to implement the Federal/Alberta agreement.

Figure 6

Natural Gas Production

Year	1973	1974	1975	1976	1977 ^(e)
Net Sales in Canada	1229.4	1314.3	1324.7	1370.3	1413.1
Other Canadian Uses **	187.3	147.6	175.4	134.7	163.4
Exports	1027.9	959.0	946.9	953.6	1000.3
Total Production *	2444.6	2420.9	2447.0	2458.6	2576.8

(e) estimated * Marketable Pipeline Gas ** Includes Pipeline Fuel and Losses



Natural Gas Exports

Net exports of natural gas to the United States totalled 1,000 Bcf for the year 1977. This volume is 47 Bcf greater than exports during 1976.

During February and March 1977, unseasonably cold weather was experienced in the Northeastern United States, and in certain regions a state of emergency was declared. The Board, in response to requests for short term gas exports to help alleviate the emergency situation, approved under the authority of Section 18 of the Regulations the export of 41.2 Bcf of gas through export locations on the international boundary at Huntingdon, British Columbia; Cardston, Alberta; Emerson, Manitoba; and Niagara Falls, Ontario. The total quantity shipped under these "emergency exports" was 39.4 Bcf. In addition, 4,521,824 U.S. gallons (427,547 MMBtu) of liquefied natural gas were approved for export from Montreal, Quebec by tank truck during the same period.

In April 1977, the Board approved an application by Canadian-Montana Pipe Line Company in which the company sought to maintain for five years the annual rate of delivery of gas under its four existing export licences at the level, approved in 1976, of 34.2 Bcf. The approval of the amendments to the two licences allows Canadian-Montana to export an additional 5 Bcf of gas per year, until 14 May, 1982, to be charged against the total volume of gas previously authorized for these licences. In considering the application, the Board noted Canadian-Montana's statement that while it could improve the deliverability of the isolated Aden (Pakowki Lake) fields, this would require substantial additional investment which could not be made on the basis of year to year export authorizations. The alternative appeared to be that the Pakowki Lake fields could become "shut-in". Supplies from this area are not readily available to Canadian markets unless new facilities are constructed. Increased deliverability from this area, on the other hand, permits the shifting of some of Canadian-Montana's exports at Cardston to Aden, thereby making some of the gas otherwise exported at Cardston available for sale in Canada.

Natural Gas Export Price

As it has done annually since 1974, the Board conducted a review of the price of natural gas exported from Canada under existing licences, and made recommendations thereon to the Government. This annual review is conducted pursuant to the Board's obligations under Section 11A of the National Energy Board Part VI Regulations, adopted in 1970, which requires the Board to maintain surveillance of natural gas export selling prices and report on them from time to time to the Governor in Council.

In its first such report, in 1974, the Board recommended that export prices for gas be raised towards its commodity value in the market place, and stressed the importance of not exporting natural gas at prices below its replacement cost to Canadians. The Board's reports in 1975 and 1976 reflected a gradual shift in emphasis from commodity value to substitution or replacement cost as the most influential factor in determining the appropriate export price.

In the spring of 1977 the Board recommended that the price for natural gas being exported from Canada be increased to a uniform price of the Canadian dollar equivalent of \$2.25 (U.S.) per thousand cubic feet, except for GL-29, which was to be priced at the Canadian dollar equivalent of \$2.00 (U.S.) per thousand cubic feet to take into account the special circumstances in the market served by GL-29. These price recommendations were based on a review of prevailing prices in Canadian natural gas export markets for alternative energy sources, the cost to Canadians of foreign crude oil imports and other factors. In announcing the Government's decision on 23 June, 1977, the Minister of Energy, Mines and Resources stated that the Government had reviewed the Board's recommendation with United States authorities and both governments had agreed that the concept of substitution value, or replacement cost, would be an acceptable basis for determining the current export value for Canadian natural gas. The Government set the export price at \$2.16 (U.S.) per thousand cubic feet, except for GL-29, which was priced at \$2.00 (U.S.) per thousand cubic feet.

Gas Pipeline Construction

Authorization for new pipeline construction in 1977 other than for the major Northern Pipeline Project, Foothills (Yukon), was granted to the TransCanada PipeLines Limited looping program, in Saskatchewan and Manitoba, TransCanada's requalifying program for the Ottawa-Montreal pipeline plus re-rating on its line 1 in Northern Ontario, looping and gathering lines for Westcoast Transmission Company in British Columbia and for a few miles of transmission line to be constructed by Many Islands Pipelines (Canada) Limited in Saskatchewan.

The half billion dollar Tenneco Lorneterm LNG offloading and vaporization facility in New Brunswick was approved by the Board in November 1977, however the necessary approvals have not been granted as yet by the United States authorities.

The Westcoast Transmission Company Limited, in June 1977, submitted an application to gather and process gas produced from fields in the Grizzly Valley, Bullmoose and Sukunka areas in British Columbia. This sour gas pipeline would involve a total of 103.8 miles of pipeline of various diameters plus a natural gas processing plant. This company also submitted, in August 1977, an application to gather and process gas produced from fields in the Silver-Dahl areas of British Columbia and to construct an addition to the Rigel Booster station in the Peace River district. This sour gas pipeline would result in a total of 99.2 miles of pipelines also of various diameters. These applications have been heard by the Board and decisions are pending.

TransCanada PipeLines Limited obtained National Energy Board approval to construct 66.8 miles of 42-inch pipeline consisting of three separate sections in Saskatchewan and one in Manitoba. This completes TransCanada's third line in Western Canada.

Approval for the replacement of about 4 miles of 30-inch pipeline in the North Bay area was granted to TransCanada following a serious break in that

pipeline. Additional safety features, required by the Board, have been built into this project which was completed just prior to Christmas.

The Westcoast Transmission Company was granted approval to construct 19.5 miles of 12-inch gathering line, 23 miles of 36-inch looping south of the Taylor compressor station, 1 mile of 36-inch loop across the Peace River about 4 miles upstream from the Hudson Hope dam site plus increased compression facilities at the Taylor compressor station.

Many Islands Pipelines (Canada) Limited was granted authority to construct 17.6 miles of 10-inch diameter pipeline in the Provinces of Alberta and Saskatchewan.

The Board recently received the facilities section of the Polar Gas application for the transporting of Arctic Islands gas from the Drake Point and Hecla natural gas fields in Melville Island south to the tip of Boothia Peninsula through the District of Keewatin in the North West Territories, eventually along an alignment to the East of Pickle Lake and terminating at an interconnection with TransCanada near Longlac, Ontario.

The mainline route would be 2338 miles in length and would include 89.1 miles of channel crossings between the several islands in the Arctic. It would have an outside diameter of 42 inches except that some channel and river crossings would be crossed by parallel lines of pipeline with an outside diameter of 36 inches. This pipeline would be capable of operating at 1680 psig. It would initially have a capacity of 1350 million cubic feet per day utilizing 10 compressor stations. An additional 9 compressor stations would bring the capacity of the pipeline to 2180 million cubic feet per day with an ultimate capacity of 3000 cubic feet per day.

Pipeline Incidents

Various pipeline incidents occurred on the facilities under the Board's jurisdiction. Investigation and study of oil spillage in three instances resulted in the introduction of procedures to minimize the possible hazard to the public from such incident.

A recent break in TransCanada's gas pipeline at North Bay has resulted in an investigation and study of TransCanada's pipeline system with a view to upgrading the system's weaker sections.

Matters dealing with Rights-of-Way for pipelines

The recommendations made by the Law Reform Commission on Expropriation presented to the Minister of Justice in March, 1976 are being implemented wherever possible. Particularly, the requirements of negotiation with landowners in respect of right-of-way and settlement were stressed in all new pipeline construction.

Considerable progress was made along the Sarnia-Montreal pipeline with landowners where matters of restoration and settlement had been outstanding.

Improved communication and interaction between landowners, pipeline contractors and companies have resulted in significantly fewer complaints over the past year. This is also the result of better construction timing and methods, e.g. the Cochin Pipe Lines Ltd. project in the Provinces of Alberta and Saskatchewan, the Interprovincial Pipe Line Limited — Trans-Northern Pipe Line Company joint project in the Province of Ontario, and the TransCanada PipeLines Limited projects in the Provinces of Saskatchewan and Manitoba.

Export Control of Propane and Butanes

The Board regulates the exports from Canada of propane and butanes, for periods of up to 12 months, by issuance of orders under the provisions of Section 16 of the Part VI Regulations. The quantities available for export under orders are determined for each year (April to March) on the basis of estimated annual Canadian production less estimated Canadian requirements and previously licensed exports. Export orders are issued quarterly and monthly on the basis of each company's supply in each allocation period. During 1977, 457 orders were issued authorizing propane or butane exports.

For 1977, the total production of propane and butanes in Canada amounted to 46,041 thousand (M) barrels and 27,514 M barrels respectively. Although total refinery production increased over the level of recent years, the production from natural gas continued to account for the majority of Canadian LPG production. In 1977 80.5 percent of propane production and 88.8 percent of butanes production were derived from natural gas.

The total volume of propane exported from Canada in 1977, represents 65.8 percent of total propane production or 30,300 M barrels. Comparatively, the exported butane represents 57.4 percent of net butane production or 15,800 M barrels.

In light of the seasonal nature of both the export and domestic markets, substantial volumes of both propane and butanes are stored in underground caverns in both Canada and the U.S. During 1977, the peak underground inventories in Canada were 8,988 M barrels of propane and 3,492 M barrels of butanes. As of 31 December, 1977 the inventories of propane and butanes in storage were approximately 5.7 million barrels and 2.3 million barrels respectively.

The Board constantly reviews the prevailing domestic and export prices for propane and butanes, and establishes a minimum export price, normally on a monthly basis, for each of these products. In 1977, the minimum export price for propane ranged from 18 cents per gallon f.o.b. Alberta to 23 cents per gallon f.o.b. Alberta with the latter being the minimum export price for December. For butanes the minimum export price ranged from 20 cents per gallon f.o.b. Alberta to 24 cents per gallon f.o.b. Alberta, again with the latter being the minimum export price for December.

When applications are made for authorization to export propane or butanes for periods in excess of twelve months, the Board may issue licences for such exports under the provisions of Section 82 of Part VI of the Act.

PanCanadian Gas Products Ltd. submitted an application for an export licence for a five year term commencing 1 January, 1978 for a total volume of 7,270,148 barrels, with annual volumes applied for varying from 1,283,387 barrels to 1,528,493 barrels. The propane to be exported under the licence would be transported via the Interprovincial Pipeline system from Alberta to Sarnia, Ontario, where it would be fractionated and subsequently exported. The Board held a public hearing on PanCanadian's application in December and the Board's decision was pending as the year ended.

ELECTRICITY

Total Canadian consumption of electric energy in 1977 is estimated to have been 300,000 GWh, about 6 percent more than in 1976.

At the end of 1976 Canada's total net electrical generating capability was 61,900 MW, of which hydroelectric plants accounted for 38,543 MW, conventional thermal stations 21,073 MW and nuclear power 2,284 MW. Planned additions in 1977 were 1,720 MW of hydro, 3,679 MW of conventional thermal and 1,429 MW of nuclear power for a total planned increase of 11 percent.

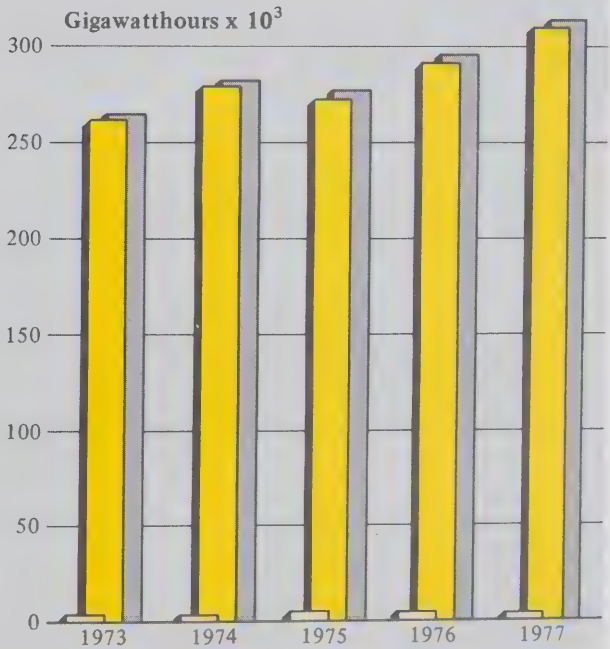
Figure 7

Electricity Supply

Year	1973	1974	1975	1976 ^(p)	1977 ^(e)
Total Canadian Generation	263.3	280.3	273.4	293.4	313.8
Imports from United States	2.3	2.4	4.0	3.6	2.8
Total Supply	265.6	282.7	277.4	297.0	316.6

(p) preliminary (e) estimated

- Total Supply
- Total Canadian Generation
- Imports from United States



International and Interprovincial Transfers of Electricity

Gross exports of electricity in 1977 were 19,957 GWh (12,804 GWh in 1976) and imports were 2,690 GWh (3,590 in 1976), resulting in estimated net exports of 17,267 GWh (9,214 GWh in 1976). These net exports constituted about 5 percent of total Canadian generation.

Export revenues of about \$419 million (\$174 million in 1976) and import costs of about \$13 million (\$6.6 million in 1976) resulted in a net revenue of approximately 406 million (\$167 million in 1976).

In 1977 the typical exporter sold twice the quantity of electricity and earned three times as much revenue as in 1976. Strong export markets existed all year for reasons including cold weather in early 1977 across the U.S., low water flows in the Pacific northwest until mid-year, and prospective coal supply difficulties due to U.S. labour disputes towards the end of the year.

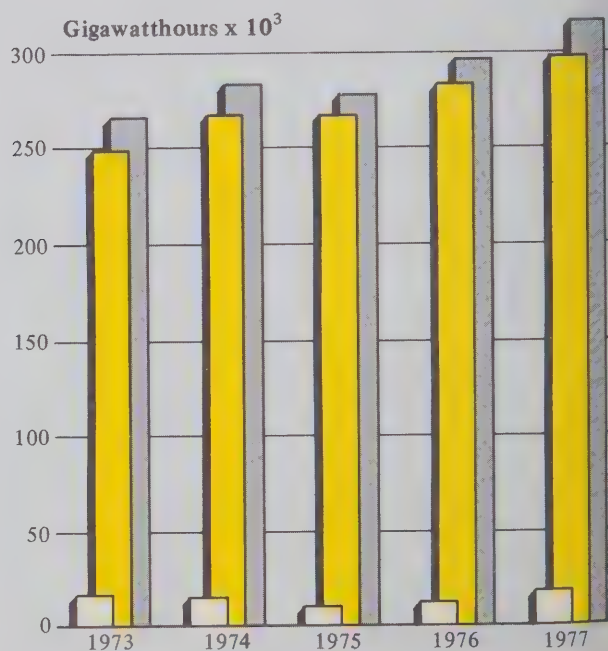
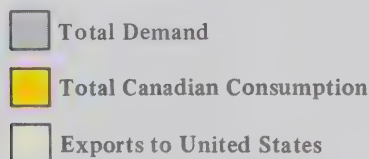
Most of the electricity purchased in 1977 was imported by Manitoba Hydro. Low rainfall and snowfall resulted in lowered water flows, causing this utility to be a net importer of power in the first nine months of 1977. By comparison the bulk of imports in 1976 were made by Ontario Hydro during periods of equipment outages early in that year.

Figure 8

Electricity Demand

Year	1973	1974	1975	1976 ^(p)	1977 ^(e)
Total Canadian Consumption	248.7	267.3	266.0	284.2	297.3
Exports to United States	16.9	15.4	11.4	12.8	19.3
Total Demand	265.6	282.7	277.4	297.0	316.6

(p) preliminary (e) estimated



The opportunity to import electricity in time of need is an important benefit which may become available with the construction of an international power line and many transaction agreements provide for the transfer of electricity in both directions. Thus Canadian utilities can provide more secure service to Canadian users while being able to reduce capital expenditures which would otherwise be necessary to provide a similar level of security by the construction of additional generation and transmission facilities in Canada.

Returns submitted to the Board by the major exporting utilities showed that of the exports over the major system interconnections in 1977, 31 percent of the energy sold came from hydro generation, 46 percent from imported coal, 16 percent from imported oil, 3 percent from Canadian fossil fuels and 4 percent purchased from adjacent utilities.

Before electricity can be sold to United States markets it must be offered to neighbouring Canadian markets and be found to be surplus to Canadian requirements. For these reasons the Board monitors Canadian power generation and transfers although it does not regulate these matters. Electricity supply and demand are tabulated and displayed in Figures 7 and 8. Exact figures for interprovincial transfers of electric energy in 1977 are not yet available. Figure 9 shows international and interprovincial transfers for 1976.

Electrical Applications

During 1977 the Board held public hearings on four electrical applications.

Manitoba Hydro sought authority to construct a 500 kV international power line some 130 miles long from the Dorsey station near Winnipeg to the international border east of Sprague, Manitoba. In the U.S. the line would continue some 350 miles to Chisago County, Minnesota, forming an interconnection with Northern States Power Company and Minnesota Power and Light Company. Manitoba Hydro also applied for new licences to allow export of firm and interruptible power and energy. The application was heard in Winnipeg in May. In September the Board issued a

Certificate for the construction of the line and issued seven new licences to allow the export of power from 1 May, 1980 for periods of up to 13 years. The first three licences allow Manitoba Hydro to sell up to 19,500 GWh of interruptible energy over the entire term of the first licence, to sell 200 MW of firm power each summer with a maximum of 876 GWh per year of firm energy, and to exchange 300 MW of seasonal diversity capacity and to sell energy up to a maximum of 262.8 GWh per year. The agreement provides for Northern States Power Company to sell to Manitoba Hydro up to 1,500 GWh of energy per year in the event of adverse water conditions in Manitoba.

Cominco Ltd. of Vancouver, B.C. applied for licences to continue exporting surplus interruptible electrical energy. A public hearing was held in Vancouver on 7 July and in November the Board announced the granting of a licence to Cominco Ltd. permitting the export of interruptible energy up to a maximum of 1,400 GWh in any consecutive twelve-month period. A second licence permits Cominco to export power as a carrier transfer for return to Canada with no net export involved. Both licences are for five years starting 1 January, 1978.

Hydro-Quebec applied for licences to continue the export of small quantities of electricity to Vermont to Citizens Utilities Company, Vermont Electric Cooperative and Union/Butterfield Division of Litton Industrial Products Incorporated. Following a public hearing in Montreal on 4 October the Board issued one order and two licences to authorize the export of a total of 35 MW of firm power per year for a three-year period ending 31 December, 1980. Following the same hearing the Board granted a certificate which Hydro-Quebec had applied for to construct a 120 kV international power line for a distance of about one mile from Stanstead, Quebec to Derby Line, Vermont to give increased power transfer capability to Citizens Utilities.

The New Brunswick Electric Power Commission applied for licences to export surplus electric power and energy to Maine Public Service Company and Eastern Maine Electric Cooperative, and for a certificate to

Figure 9

International and Interprovincial Transfers of Electricity for 1976



construct a 138 kV international power line for a distance of about eight miles from Beechwood, N.B. to the U.S. border from where the line would continue in the United States to Flo's Inn, Maine. A public hearing was held at Fredericton, N.B. in November 1977, and the Board's report was in preparation at the end of 1977.

The Board is empowered to authorize the export of small quantities of power by order. During the year, two such orders were issued.

New certificates of public convenience and necessity and amending orders issued during 1977 are tabulated in Appendices E-I and E-II.

New licences and orders to export power and energy and amending orders issued in 1977 are tabulated in Appendices E-III and E-IV. Exports of electric energy under each licence in 1977 are tabulated in Appendix E-V and the total electric energy trade for 1977 is shown in Appendix E-VI.

Other Activities

Reports on the output, fuel consumption and selected operating characteristics of Canadian thermal generating stations for 1975 and 1976 were completed. A report on the estimated capital costs of new thermal generating stations as at 1 January, 1977 was published. A special study was made on the reliability indices and generation planning practices of electrical utilities and work in this area is continuing.

At the request of the Department of Energy, Mines and Resources, a member of the staff was appointed Chairman of the Regional Planning subcommittee for the Maritime Energy Corporation feasibility study. In addition, staff was actively involved in the reassessment of Fundy Tidal Power. This study has been completed and the Bay of Fundy Review Board report is expected to be published early in 1978. The staff has prepared several technical papers for Canadian and international electrical engineering societies. These include two papers on the system planning aspects of Bay of Fundy Tidal power developments. A paper

entitled "Analysis and Simulation of the Effects of Controlled Water Heating in a Winter Peaking System" has been accepted by the Institute of Electrical and Electronic Engineers for publication.

FINANCIAL MATTERS

The Board investigated and assessed the financial, accounting and economic aspects of various applications for pipeline construction, energy exports and tariff determinations. Due to a number of emergency exports of natural gas and an increase in the export price, revenues increased approximately 27.02 percent over the year 1976 to an estimated \$2,072.6 million.

Revenues from exports of crude oil and equivalent hydrocarbons and petroleum products in 1977 amounted to an estimated \$2,128.8 million compared to \$2,690.5 million in 1976, a percentage decrease of 20.8. This decrease results from lower export volumes of crude oil, equivalent hydrocarbon and petroleum products.

Audits were conducted on exports of oil and oil products reported to the Board, and on the export charges levied and paid thereon or, where applicable, refunded or reduced, under the provisions of the Petroleum Administration Act and Regulations. During 1977, the Board collected and transmitted to the Receiver General approximately \$473.2 million. Audits of exporters of propane and butanes were also carried out during 1977.

During the year the Board continued its surveillance of the accounting and financial activities of 22 oil and gas pipeline companies under its jurisdiction. This was carried out through the analysis of periodic and/or special reports required by the Board, together with field audits to verify compliance with the Board's Uniform Accounting Regulations. Special pre-rate case and post-rate case audits were also carried out to clarify the interface between the accounting and rate-making treatment for particular items of rate base or cost of service and to ensure compliance with specific directives issued by the Board on accounting matters. In addition, the Board has begun an internal review of its regulatory procedures in the above areas with the

object of improving communications between itself, applicants and intervenors in connection with applications under Part IV of the National Energy Board Act.

On 20 September, 1975, the Board commenced a public hearing to ascertain whether the tolls charged by Interprovincial Pipe Line Limited are just and reasonable and to ensure that the company does not make any unjust discrimination in tolls, services or facilities against any person or locality. The first part of the three-part hearing was completed 13 October, 1976, and the second part commenced 6 December, 1976, and was adjourned 15 December, 1976 to reconvene on 31 January, 1977. The Board on 10 February, 1977 requested Interprovincial to file

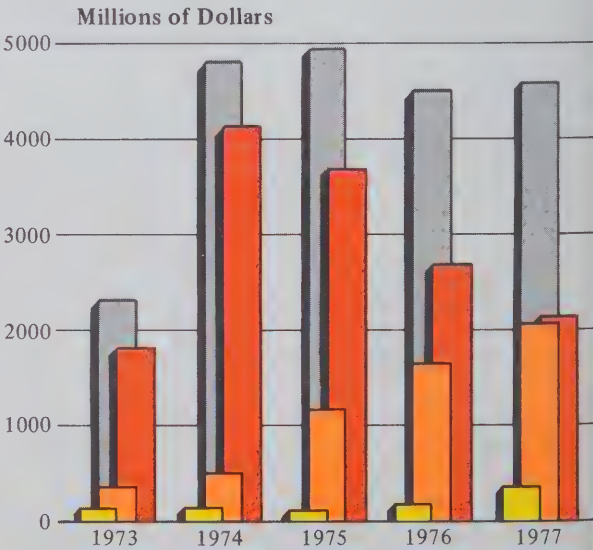
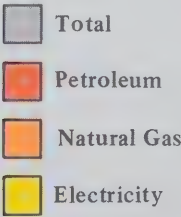
certain information in respect of its wholly owned subsidiary Lakehead Pipeline Ltd. under Order PO-5-RH-2-76. On 11 March, 1977 an appeal was filed by Interprovincial in respect of PO-5-RH-2-76 with the Federal Court of Appeal. The Federal Court upheld the Board's Order PO-5-RH-2-76 in its ruling on 19 August, 1977. Interprovincial filed an application with the Supreme Court of Canada for Leave to Appeal from the Order of the Federal Court of Appeal. The Supreme Court of Canada dismissed Interprovincial's Application for Leave to Appeal on 5 October, 1977. The second part of the hearing commenced on 31 October, 1977 and was adjourned on 2 November, 1977. The Board's Reasons for Decision were issued in December 1977.

Dollar Value of Exports of Oil, Gas and Electricity (Gross)

Figure 10

Year	1973	1974	1975	1976 ^(p)	1977 ^(e)
Petroleum	1829.3	4134.2	3685.8	2690.5	2128.8
Natural Gas	358.1	503.1	1166.3	1631.7	2072.6
Electricity	115.1	169.3	104.9	173.8	403.6
Total	2302.5	4806.6	4957.0	4496.0	4605.0

(p) preliminary (e) estimated



The Board rendered a decision in January 1977 in the matter of a rate application by ICG Transmission Limited prescribing rates and tolls of that Company in respect of gas sold in the Rainy River – Fort Frances area of Ontario.

On 2 March, 1977, TransCanada PipeLines Limited filed an application under Part IV of the National Energy Board Act for rates to include normalized current income tax liability arising from the prior use of flow-through tax accounting for utility income. This application will be combined with a new application expected to be filed in early 1978.

The Board approved rates and tolls for TransCanada PipeLines Limited which were compatible with prices prescribed under the Petroleum Administration Act effective 1 August, 1977. An application under Part IV of the Act was filed on 15 September, 1977 by Westcoast Transmission Company. The Board has scheduled a public hearing in this matter for early 1978. An application under Part IV of the Act was filed on 14 November, 1977 by Trans-Northern Pipe Line Company. During 1978 the Board proposes to conduct a public hearing into the justness and reasonableness of this company's tolls and tariffs.

On 15 November, 1977 the Board commenced a public hearing to ascertain whether the tolls charged by Trans Mountain Pipe Line Limited are just and reasonable and to ensure that the company does not make any unjust discrimination in tolls, services or facilities against any person or locality. The hearing was adjourned on 16 November, 1977 in Ottawa. On 28 November, 1977 the hearing reconvened in Vancouver and concluded on 2 December, 1977.

ENVIRONMENT

Protection of the environment is a major concern of the Board in considering applications for certificates, licences and orders. The applicants are required, pursuant to the Act, to submit a report consisting of a description of the existing environment, an assessment of the probable environmental impact of proposed oil and gas pipelines and proposed international power lines and export of power, and the steps proposed to be taken to mitigate the effect on the environment.

The environmental information requirements for oil and gas pipelines are set forth in the Board's Rules of Practice and Procedure, and for export of power in the Board's Regulations. To assist prospective applicants in the preparation of environmental assessment reports for pipeline projects, a discussion draft of environmental information guidelines was prepared and circulated to the industry and to some Departments of the Federal Government for comments. All comments received have been reviewed and, where appropriate, have been incorporated into the guidelines. The final version of these guidelines is expected to be completed early in 1978.

The applications received in 1977 involved a variety of construction and operation activities, each with its unique impact upon the environment. Environmental aspects were assessed with respect to such activities as constructing new pipelines and international power lines; looping of existing pipelines; pipeline replacements; increased operating pressure in pipelines, and generation of power for export. Geographically, these applications ranged from Canada's Arctic areas to the urban and industrialized zones of southern Canada and involved diverse environmental concerns such as impact on permafrost soils, revegetation in tundra areas, impact of herbicide use for control of weeds on rights-of-way, erosion and siltation at water crossings of pipelines, impact on wildlife, fish and forests, air and water quality control, preservation of archaeological and palaeontological sites of significance, protection of agricultural soils, etc. The Board evaluated many such diverse environmental concerns with respect to three competing applications for the transportation of natural gas from Alaska and the Mackenzie Delta through the Yukon and the Northwest Territories. The Board also evaluated the environmental implications of a proposed sour gas processing plant in British Columbia and of an LNG transportation and processing project in New Brunswick.

Although most of the work involved the assessment of the environmental implications of pipeline and powerline applications, the Board also carried out a number of field inspections to evaluate the effectiveness of environmental protection measures implemented by various pipeline companies during construction. With respect to protection of agricultural soils, the Board obtained advice and services of experts of the Soil Research Institute of Agriculture Canada.

Organization of the National Energy Board

The Board is divided into eight separate branches, and the following is a brief outline of the responsibilities of these branches.

Economics Branch

Responsible for energy statistics including supply/demand balances for all sources of energy, short and long-term energy forecasts analysis of market requirements in respect of applications, and economic analysis of major energy projects and of the energy industries.

Electrical Engineering Branch

Advises the Board on all matters concerning electric power including regulatory operations associated with authorizing the construction of international power lines and with licensing exports of power; conducts studies on various aspects of the planning and engineering of electric power systems and power generation.

Engineering Branch

Advises the Board on matters of oil and gas exploration, drilling and production. Forecasts trends in oil and gas supply from conventional, oil sands, and synthetic sources. Independently calculates the reserves and deliverability of gas and the reserves and producibility of oil. Responsible for pipeline design, construction, operation, right of way and public safety. Carries out inspection, engineering and economic studies in relation to pipelines and associated facilities. Analyzes and makes recommendations on engineering aspects of construction of oil and gas pipelines and gas processing plants. Provides environmental advice and assessments respecting the construction and operation of pipelines and power lines and exportation of oil, gas and electric power and other related activities.

The Calgary office of the Engineering Branch is engaged in the actual pool by pool calculation of gas and oil reserves and the inspection of pipelines in Western Canada which are under the Board's jurisdiction.

Finance, Personnel, and Administration Branch

Provides administrative support to the Board, including such functions as finance, personnel, official languages, library, communications, security and office services.

Financial Branch

Provides advice on rates and accounting matters in respect of regulatory and advisory functions. Analyzes and recommends on the financial aspects of construction of oil and gas pipelines, including financial and economic feasibility, methods of financing, financial structure of applicants and Canadian content of projects. Examines the rate structures including methods of rates, tolls and tariff designs of oil and natural gas pipelines and pricing aspects of oil, natural gas and electricity for export. Organizes and conducts field audits of pipeline companies and licensed exporters of oil and gas. Develops uniform accounting regulations for pipeline companies.

Law Branch

Advises the Board on its statutory powers, prepares regulations and rules of procedure, prepares draft amendments to the Act, examines witnesses at hearings, assists in the preparation and review of submissions to Governor in Council, Reasons for Decision, Orders and Certificates and conducts litigation for and on behalf of the Board.

Oil Policy Branch

Acts as the Board's principal staff source of information and advice on national and international matters affecting oil policy. Provides the staff advice and appraisals for the Board's control over licensed exports and export prices of crude oil and equivalent hydrocarbons and petroleum products.

Gas Advisory Branch

Acts as the Board's primary advisor on matters affecting natural gas and gas products policy. Provides the staff advice on the pricing of natural gas exports, the administration of Part III of the Petroleum Administration Act which is concerned with domestic natural gas price restraint, and the administration of the propane/butanes export control programme. Analyzes and makes recommendations on economic, market and regulatory aspects of natural gas facilities, rates and export applications, provides short term gas industry and market analysis, and coordinates all matters relative to export controls on ethane and ethylene.

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L.M. Thur	Associate Vice-Chairman
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J. Farmer	Member
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Ann Sicotte	Information Officer
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M.E. LeClerc	Director General, Special Projects

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ENGINEERING BRANCH

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APPENDIX G-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR GAS PIPELINES ISSUED DURING 1977

Applicant	Facilities	Estimated Cost	Heard	Issued	Cert. No.
1. TransCanada PipeLines Limited	(A) Approximately 17.5 miles of 42-inch diameter line of pipe and other works in the Province of Saskatchewan (B) Approximately 12.1 miles of the 30-inch diameter line of pipe and other works in the Province of Ontario	\$14,762,400	1-2 February 1977	21 April 1977	GC-55
2. TransCanada PipeLines Limited	(A) Approximately 39.2 miles of 42-inch diameter line of pipe and other works in the Provinces of Saskatchewan and Manitoba (B) Certain manifold piping and other works at Compressor Station No. 34 in the Province of Manitoba	\$20,223,500	31 May & 1 June 1977	1 September 1977	GC-56
3. TransCanada PipeLines (New Brunswick) Limited and Lorneterm LNG Limited	(A) Approximately 66 miles of 36-inch diameter line of pipe and other works (B) LNG Plant and Terminal facilities and other works all in the Province of New Brunswick	\$51,639,200 (1976 \$'s) \$68,731,800 (1981 \$'s) \$384,427,000 (1976 \$'s) \$464,343,000 (Total escalated cost)	27 September to 13 October 1977	16 December 1977	GC-57

APPENDIX G-II

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1977
CLASS B CONSTRUCTION

Applicant	Facilities	Estimated Cost	Issued	Order No.
Westcoast Transmission Company Limited	Approximately one mile of 36-inch diameter line of pipe and works connected therewith, designated '36" Peace River Submarine Crossing', (Fort Nelson Line) near Cherwynd, in the Province of British Columbia.	\$ 3,098,000	4 May 1977	XG-1-77
Westcoast Transmission Company Limited	Approximately 23.3 miles of 36-inch diameter line of pipe and works connected therewith, near Taylor, in the Province of British Columbia.	11,349,000	16 June 1977	XG-2-77 (as amended)
TransCanada PipeLines Limited	Additional pipeline, being a new permanent Meter Station, known as 'Sheridan-Union Meter Station', and works connected therewith, in the Province of Ontario.	279,000	27 Sept. 1977	XG-3-77
TransCanada PipeLines Limited	Replacement of certain existing portions of 30-inch diameter line of pipe and works connected therewith, with new line of pipe, in four areas, in the City of North Bay, in the Province of Ontario.	3,871,600	28 Oct. 1977	XG-4-77 (as amended)
Many Islands Pipe Lines (Canada) Limited	Approximately 17.6 miles of 10-inch diameter line of pipe and works connected therewith, vicinity of Beacon, Saskatchewan, in the Provinces of Alberta and Saskatchewan.	1,343,146	4 Nov. 1977	XG-5-77
Westcoast Transmission Company Limited	Approximately 11 miles of 8-inch diameter line of pipe and works connected therewith, known as 'South Clarke Lake Pipeline', in the Province of British Columbia.	2,554,000	16 Dec. 1977	XG-6-77

This construction which at the discretion of the Board may be subject of a specific exemption order pursuant to section 49.

APPENDIX G-II (Cont'd)

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1977 CLASS C CONSTRUCTION

Applicant	Facilities	Estimated Cost	Issued	Order No.
Many Islands Pipe Lines (Canada) Limited	Certain modifications to be made to its pipeline in the Province of Saskatchewan.	\$ 35,200	23 Feb. 1977	XGM-1-77
Consolidated Pipe Line Company	Certain facilities to be added to its pipeline in the Province of Saskatchewan.	16,500	4 May 1977	XGM-2-77
ICG Transmission Limited	Certain modifications to be made to its pipeline, in the Province of Ontario.	75,760	4 May 1977	XGM-3-77
TransCanada PipeLines Limited	Certain modifications to be made and certain facilities to be added, respectively, to its pipeline, in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Quebec.	51,173,295	30 Dec. 1976 19 May 1977 14 July 1977	XGM-5-76 XGM-4-77 XGM-7-77
Alberta Natural Gas Company Ltd	Certain facilities to be added to its pipeline in the Provinces of Alberta and British Columbia.	244,337	5 July 1977	XGM-5-77
Westcoast Transmission Company Limited	Certain facilities to be added to its pipeline in the Provinces of Alberta and British Columbia, and in the Yukon and Northwest Territories.	12,270,889	14 July 1977	XGM-6-77

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1977

Type of Licence or Order	Licensee	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum		
				From	To	Daily	Annual	Term
Nat. Gas Export (Section 82)	Tenneco LNG Inc.	GL-49	St. Stephen, N.B.	*	**	32.295 x 10 ⁶ m ³	11.82 x 10 ⁹ m ³	***

- * Date of Initial Delivery
- ** Twenty years and six months after the date of First Regular Delivery or a total term from Initial Delivery not exceeding 25 years.
- *** The total gas or equivalent quantity expressed in cubic meters of liquified natural gas imported pursuant to Licence GLI-7

Type of Licence or Order	Licensee	Order Number	Date of Issue	Comments
Orders Amending Existing Natural Gas Export Licences (Section 17)	1. TransCanada Pipelines Limited	AO-9-GL-1	4/8/77	(i) Amendment establishing that the prices to be received for gas exported, including all transmission charges, by the Licensee on and after September 21, 1977, shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	2. Alberta and Southern Gas Co. Ltd.	AO-9-GL-3	4/8/77	(i) Amendment establishing that the prices to be received for gas exported, including all transmission charges, by the Licensee on and after September 21, 1977, shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	3. Westcoast Transmission Company Limited	AO-10-GL-4	4/8/77	(i) Amendment establishing that the prices to be received for gas exported, including all transmission charges, by the Licensee on and after September 21, 1977, shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	4. Canadian-Montana Pipeline Company	AO-10-GL-5	22/4/77	(i) Amendment varying the annual quantities authorized to be exported under Licence Nos. GL-5, GL-17, GL-25, and GL-36 so as to permit the Licensee to export a greater specified annual quantity each year in a five-year period, however, such variation shall not affect the total quantity authorized to be exported under the above stated licences for the term of the licences.
	5. Canadian-Montana PipeLine Company	AO-11-GL-5	4/8/77	(i) Amendment establishing that the price to be received for gas exported, including all transmission charges by the Licensee on and after September 21, 1977 shall not be greater than and less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1977

Type of Licence or Order	Licensee	Order Number	Date of Issue	Comments
	6. Niagara Gas Transmission Ltd.	AO-16-GL-6	4/8/77	(i) Amendment establishing that the price to be received for gas exported, including all transmission charges by the Licensee on and after September 21, 1977 shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified. (ii) Amendment specifying the price to be received for "Peaking Service" gas in accordance with specified contractual agreements.
	7. Niagara Gas Transmission Ltd.	AO-17-GL-6	18/8/77	(i) Amendment providing for increases in the daily and annual volumes of gas authorized for exportation providing that such increases shall not affect the total quantity authorized to be exported under the term of the licence.
	8. Alberta and Southern Gas Co. Ltd.	AO-7-GL-16	4/8/77	(i) Amendment establishing that the price to be received for gas exported, including all transmission charges by the Licensee on and after September 21, 1977 shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	9. Canadian-Montana PipeLine Company	AO-8-GL-17	22/4/77	(i) Amendment varying the annual quantities authorized to be exported under Licence Nos. GL-5, GL-17, GL-25, and GL-36 so as to permit the Licensee to export a greater specified annual quantity each year in a five-year period, however, such variation shall not affect the total quantity authorized to be exported under the above stated licences for the term of the licences.
	10. Canadian-Montana PipeLine Company	AO-9-GL-17	4/8/77	(i) Amendment establishing that the price to be received for gas exported, including all transmission charges by the Licensee, on and after September 21, 1977 shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	11. TransCanada PipeLines Limited	AO-11-GL-18	4/8/77	(i) Amendment establishing that the price to be received for gas exported, including all transmission charges by the Licensee, on and after September 21, 1977 shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1977

Type of Licence or Order	Licensee	Order Number	Date of Issue	Comments
	12. TransCanada PipeLines Limited	AO-10-GL-19	4/8/77	(i) Amendment establishing that the price to be received for gas exported, including all transmission charges by the Licensee, on and after September 21, 1977 shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified. (ii) Amendment specifying the price to be received for "Peaking Service" gas in accordance with specified contractual agreements.
	13. TransCanada Pipelines Limited	AO-15-GL-20	4/8/77	(i) Amendment establishing that the price to be received for gas exported, including all transmission charges by the Licensee, on and after September 21, 1977 shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	14. Alberta and Southern Gas Co. Ltd.	AO-9-GL-24	4/8/77	(i) Amendment establishing that the price to be received for gas exported, including all transmission charges by the Licensee, on and after September 21, 1977 shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	15. Canadian-Montana PipeLine Company	AO-12-GL-25	4/8/77	(i) Amendment establishing that the price to be received for gas exported including all transmission charges by the Licensee, on and after September 21, 1977 shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	16. ICG Transmission Limited	AO-9-GL-28	4/8/77	(i) Amendment establishing that the price to be received for gas exported, including all transmission charges by the Licensee, on and after September 21, 1977 shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	17. ICG Transmission Limited	AO-10-GL-29	10/2/77	(i) Amendment establishing new prices below which gas exported under the authority of Licence GL-29 may not be sold on and after September 10, 1976, and on and after January 1, 1977.

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1977

Type of Licence or Order	Licensee	Order Number	Date of Issue	Comments
	18. ICG Transmission Limited	AO-11-GL-29	4/8/77	(i) Amendment establishing that the price to be received for gas exported including all transmission charges, by the Licensee on and after September 21, 1977, shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	19. Alberta and Southern Gas Co. Ltd.	AO-6-GL-35	4/8/77	(i) Amendment establishing that the price to be received for gas exported including all transmission charges, by the Licensee on and after September 21, 1977, shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	20. Canadian-Montana PipeLine Company	AO-7-GL-36	4/8/77	(i) Amendment establishing that the price to be received for gas exported including all transmission charges, by the Licensee on and after September 21, 1977, shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	21. TransCanada PipeLines Limited	AO-9-GL-37	4/8/77	(i) Amendment establishing that the price to be received for gas exported including all transmission charges, by the Licensee on and after September 21, 1977, shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	22. TransCanada PipeLines Limited	AO-7-GL-38	4/8/77	(i) Amendment establishing that the price to be received for gas exported including all transmission charges, by the Licensee on and after September 21, 1977, shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	23. TransCanada PipeLines Limited	AO-7-GL-39	4/8/77	(i) Amendment establishing that the price to be received for gas exported including all transmission charges, by the Licensee on and after September 21, 1977, shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1977

Type of Licence or Order	Licensee	Order Number	Date of Issue	Comments
	24. Westcoast Transmission Company Limited	AO-14-GL-41	4/8/77	(i) Amendment establishing that the price to be received for gas exported including all transmission charges, by the Licensee on and after September 21, 1977, shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.
	25. Westcoast Transmission Company Limited	AO-15-GL-41	6/10/77	(i) Amendment extending the period by one year during which gas may be delivered at Kingsgate, B.C.
	26. TransCanada PipeLines Limited	AO-8-GL-43	4/8/77	(i) Amendment establishing that the price to be received for gas exported including all transmission charges, by the Licensee on and after September 21, 1977, shall not be greater than and not less than that specified in Canadian dollar equivalent of U.S. currency after adjusting for the exchange rate in a manner specified.

Type of Licence or Order	Licensee	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum
				From	To	
Orders – Emergency Natural Gas Export (Part VI Regulations Section 17)	1. TransCanada PipeLines Limited	EO-1-77	Emerson, Man.	19/1/77	19/3/77	15 Bcf
	2. Westcoast Transmission Company Limited	EO-2-77	Huntingdon, B.C.	29/1/77	31/3/77	3.1 Bcf
	3. Westcoast Transmission Company Limited	EO-3-77	Huntingdon, B.C.	3/2/77	3/3/77	1.2 Bcf
	4. TransCanada PipeLines Limited	EO-4-77	Niagara Falls, Ont.	6/2/77	7/3/77	1.3 Bcf
	5. Canadian-Montana PipeLine Company	EO-5-77	Cardston, Alta.	11/2/77	11/4/77	3.0 Bcf
	6. TransCanada PipeLines Limited	EO-6-77	Niagara Falls, Ont.	22/2/77	31/3/77	600 MMcf
Orders – Natural Gas Export LNG and small quantities of gas (Part VI Regulations Section 6B)	1. Gaz Métropolitain, inc.	GO-1-77	Montreal, P.Q.	27/1/77	27/3/77	2,420,574 U.S. gallons of liquefied natural gas
	2. Gaz Métropolitain, inc.	GO-2-77	Montreal, P.Q.	5/3/77	3/5/77	1,827,150 U.S. gallons of liquefied natural gas
	3. Gaz Métropolitain, inc.	GO-3-77	Montreal, P.Q.	5/5/77	30/11/77	7,308,681 U.S. gallons of liquefied natural gas

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1977

Type of Licence or Order	Licensee	Order Number	Date of Issue	Comments
Orders Amending Ethane Export Licences (Section 17)	1. Dome Petroleum Limited	AO-3-GL-45	1/4/77	(i) Amendment varying the total and the annual volumes of ethane authorized to be imported and exported.
Amending Orders to Emergency Orders (Section 18 Part VI Regulations)	1. TransCanada PipeLines Limited	AO-1-EO-1-77	15/2/77	(i) Amendment authorizing the exportation of an additional 12 Bcf of natural gas for sale and the exportation of an additional 1.4 Bcf of natural gas as fuel.
	2. TransCanada PipeLines Limited	AO-1-EO-4-77	4/3/77	(i) Amendment extending the term to 6 April, 1977.
	3. TransCanada PipeLines Limited	AO-1-EO-4-77	25/2/77	(i) Amendment extending the term to 31 March, 1977 and an additional 2 Bcf of natural gas.
Amending Orders — Natural Gas Export (Section 6B Part VI Regulations)	1. Gaz Métropolitain, inc.	AO-1-GO-3-77	16/9/77	(i) Amendment increasing the price of the liquefied natural gas exported under this licence to reflect increased value.

APPENDIX G-IV

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1977

Exporter	Licence or Order Number	Term of Licence or Order			Maximum		
		Point of Export	From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)
NATURAL GAS							
1. TransCanada Pipelines Limited	GL-1(AO-9)	Emerson, Man.	11/ 4/60	14/ 5/81	223,000	74,000	1,410,000
2. Alberta & Southern Gas Co. Ltd.	GL-3(AO-9)	Kingsgate, B.C.	31/10/61	30/10/86	458,750	153,270	3,826,000
3. Westcoast Transmission Company Limited	GL-4(AO-10)	Kingsgate, B.C.	10/12/61	9/12/81	152,000	51,000	1,020,000
4. Canadian-Montana Pipe Line Company	GL-5(AO-11)	Cardston & Aden, Alta.(a)	31/10/61 14/5/77	30/10/86 14/5/82	36,000	10,950 3,000	273,750
5. Niagara Gas Transmission Limited	GL-6(AO-17)	Cornwall, Ont.	7/ 9/62	30/ 6/87	23,000(b)	5,520(b)	121,190
6. Alberta & Southern Gas Co. Ltd.	GL-16(AO-7)	Kingsgate, B.C.	1/11/66 1/11/67	31/10/67 31/10/89	113,125 226,250	37,415 74,830	1,614,000
7. Canadian-Montana Pipe Line Company	GL-17(AO-9)	Cardston & Aden, Alta.(a)	1/11/66 1/11/67 14/5/77	31/10/67 31/10/89 14/5/82	12,000 24,000	3,650 7,300 2,000	164,250
8. TransCanada PipeLines Limited	GL-18(AO-11)	Emerson, Man.	22/11/65 1/11/66	31/10/68 31/10/89	25,000 143,000	8,000(c) 52,300	1,200,000
9. TransCanada PipeLines Limited	GL-19(AO-10)	Philipsburg, Que.	1/11/65	31/10/89	20,700(d)	6,500	108,000
10. TransCanada PipeLines Limited	GL-20(AO-15)	Emerson, Man.	21/11/68	31/10/91	87,600	32,100	765,000
11. TransCanada PipeLines Limited	GL-21(AO-5)(e)	Emerson, Man.	5/11/68	31/10/91	N/S	247,782	6,000,000
12. Alberta & Southern Gas Co. Ltd.	GL-24(AO-9)	Kingsgate, B.C.	1/11/68 1/11/69 1/11/91	31/10/69 31/10/91 31/10/93	121,000 236,000 135,400	38,900 77,900 44,600	1,841,900
13. Canadian-Montana Pipe Line Company	GL-25(AO-12)	Cardston & Aden, Alta.(a) Aden, Alta.	1/11/68 1/11/69 1/11/91 27/3/73(f) 14/5/74(g) 14/5/75 14/5/76 14/5/76	31/10/69 31/10/91 31/10/93 14/5/74 14/5/75 14/5/76 14/5/77	12,000 24,000 13,800 99,460 99,460 99,460 49,730	3,650 7,300 4,200 19,892 19,892 10,000 5,000	172,650
14. ICG Transmission Limited	GL-28(AO-9)	Sprague, Man.	1/11/70	31/10/95	2,834	337	8,084
15. ICG Transmission Limited	GL-29(AO-11)	Fort Frances, Ont.	1/11/70	31/10/95	32,323	7,715	192,820
16. ICG Transmission Limited	GL-30(AO-2)(h)	Sprague, Man.	1/11/70 9/ 1/73	31/10/95 31/12/73	46,662 10,296	12,144 N/S	299,990 305
17. Alberta & Southern Gas Co. Ltd.	GL-35(AO-6)	Kingsgate, B.C.	1/11/70	31/10/85	205,000	67,500	1,012,500
18. Canadian-Montana Pipe Line Company	GL-36(AO-7)	Cardston & Aden, Alta.(a)	1/11/70	31/10/85	12,000	3,650	54,750
19. TransCanada PipeLines Limited	GL-37(AO-9)	Emerson, Man.	1/11/70	31/10/90	195,800	71,663	1,433,256
20. TransCanada PipeLines Limited	GL-38(AO-7)	Emerson, Man.	1/11/70	31/10/90	50,000	18,300	366,000
21. TransCanada PipeLines Limited	GL-39(AO-7)	Emerson, Man.	1/11/70	31/10/90	7,200	2,635	52,704
22. Westcoast Transmission Company Limited	GL-41(AO-15)	Huntingdon, B.C.(i)	1/11/71 1/11/72	31/10/72 31/10/89	733,338 809,200	254,982 281,359	5,042,860

APPENDIX G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1977

Exporter	Licence or Order Number	Term of Licence or Order			Maximum		
		Point of Export	From	To	Daily* (Mcf)	Annual* (MMcf)	Term (MMcf)
NATURAL GAS (Cont'd)							
23. TransCanada PipeLines Limited	GL-42(AO-1)(e)	Emerson, Man.	15/ 4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	2,129,232
24. TransCanada PipeLines Limited	GL-43(AO-8)	Emerson, Man.	1/11/71	31/10/91	N/S	17,000	340,000
25. Consolidated Natural Gas Limited	GL-44(j)	Emerson, Man.	15/ 3/72	31/10/92	150,000	45,000	669,000
26. Canadian Lowell Gas Limited	GL-48(k)	Niagara Falls, Ont.	10/ 4/75	31/ 3/88	12,500	1,500 ^(l)	N/S
27. Western Decalta Petroleum Limited	MO-49-75	Coutts, Alta.	13/ 9/75	30/ 6/82	(m)	5	N/S
28. Tenneco LNG Inc.	GL-49	St. Stephen, N.B.	(n)	(o)	32.295 x 10 ⁶ m ³	11.82 x 10 ⁹ m ³	(p)

N/S Not specified

- (a) Notwithstanding the Cardston, Alta. export point, the Licensee may export gas at a place near Aden, Alta. (i) as long as this change does not affect the total quantity of gas authorized for export under this licence and (ii) as long as the combined volumes under certain existing licences do not exceed specified quantities to be exported at Aden.
- (b) There were exceptions for the period, 23/12/70 to 31/12/71 and 1/11/76 to 31/10/77 when exports of 30,000 Mcf daily and 6Bcf on an annual rate were authorized.
- (c) Interruptible.
- (d) The Licensee shall not export more than 17,700 Mcf in any one day until all Canadian requirements for contracted gas deliveries, including peak load requirements are met.
- (e) This licence authorizes an export near Emerson, Man. for re-import near Sault Ste. Marie and Sarnia, Ont., to serve the Eastern Canadian market.
- (f) This export actually commenced on the day when the total quantity of gas authorized by Licence No. GL-8 was exported (approximately June 1973).
- (g) This amendment stipulated a maximum daily quantity of 27,000 Mcf or 450,000 Mcf in any calendar month during the period between May 14, 1974 and the commencement of export authorized for the period May 14, 1974 to May 14, 1975.
- (h) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ont.
- (i) Notwithstanding the Huntingdon, B.C. export point, the Licensee may export gas at a place near Kingsgate, B.C. during the period from Nov. 1, 1973 to Oct. 31, 1978.
- (j) This licence authorizes an export near Emerson, Manitoba. The quantity of gas exported under the authority of this licence shall be equal to the quantities of gas which the Licensee imports pursuant to Licence No. GL1-5.
- (k) This licence authorizes the exportation of the same quantities of gas which were imported for the purpose of its storage under the authority of Licence No. GL1-6 and its subsequent amendments, in particular MO-11-76.
- (l) This quantity (in any one year) is to be exported during the consecutive five-month period commencing on the 1st day of November (in any one year) and ending on the 31st day of March in the next following year.
- (m) The quantity of gas that may be exported in any one month shall not be more than 1,000,000 cubic feet.
- (n) From the date of Initial Delivery.
- (o) Twenty years and six months after the date of First Regular Delivery or a total term from Initial Delivery not exceeding 25 years.
- (p) The total gas or equivalent quantity expressed in cubic metres of the liquified natural gas imported pursuant to Licence GL1-7.

*Except for SI measurement.

APPENDIX G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1977

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes	
			From	To	Column A (Annual Barrels)	Column B (Annual Barrels)
PROPANE						
1. Dome Petroleum Limited	GL-31 (AO-4)(a)	Gretna, Man., Elmore, Sask., Sarnia, Ont. and Windsor, Ont.	5/6/73(b)	31/12/73	6,287,500	5,827,500
			1/1/74	31/12/74	5,991,500	5,481,500
			1/1/75	31/12/75	5,913,000	5,338,000
			1/1/76	31/12/76	5,751,500	5,121,500
			1/1/77	31/12/77	5,582,500	4,887,500
			1/1/78	31/12/78	5,457,000	839,500
			1/1/79	31/12/79	5,357,000	839,500
			1/1/80	31/12/80	5,263,000	839,500
			1/1/81	31/12/81	5,114,000	839,500
			1/1/82	31/12/82	4,948,500	839,500
			1/1/83	31/12/83	4,665,500	839,500
			1/1/84	31/12/84	4,316,500	839,500
			1/1/85	31/12/85	3,898,000	839,500
			1/1/86	31/12/86	3,362,000	839,500
			1/1/87	21/12/87	2,930,500	906,000
			1/1/88	31/12/88	2,489,000	1,216,000
			1/1/89	31/12/89	2,078,000	1,241,000
			1/1/90	31/12/90	1,690,000	1,065,000
			1/1/91	31/12/91	1,396,000	1,045,000
			1/1/92	31/12/92	1,339,500	1,040,000
			1/1/93	31/12/93	1,233,500	1,025,000
			1/1/94	31/12/94	1,011,000	655,000
			1/1/95	31/12/95	294,000	0
2. Amoco Canada Petroleum	GL-32 (AO-2)(c)	Gretna, Man., Sarnia, Ont. and Windsor, Ont.	5/6/73(d)	31/12/73	3,872,500	3,589,500
			1/1/74	31/12/74	3,579,000	3,274,000
			1/1/75	31/12/75	3,533,000	3,189,000
			1/1/76	31/12/76	3,421,500	3,046,500
			1/1/77	31/12/77	3,287,000	2,878,000
			1/1/78	31/12/78	3,197,500	584,000
			1/1/79	31/12/79	3,133,500	584,000
			1/1/80	31/12/80	3,077,000	584,000
			1/1/81	31/12/81	2,987,500	584,000
			1/1/82	31/12/82	2,943,500	584,000
			1/1/83	31/12/83	2,832,500	584,000
			1/1/84	31/12/84	2,610,000	584,000
			1/1/85	31/12/85	2,401,500	584,000
			1/1/86	31/12/86	2,182,500	584,000
			1/1/87	31/12/87	2,024,000	584,000
			1/1/88	31/12/88	1,838,000	584,000
			1/1/89	31/12/89	1,690,000	584,000
			1/1/90	31/12/90	1,546,000	584,000
			1/1/91	31/12/91	1,396,000	584,000
			1/1/92	31/12/92	1,339,500	584,000
			1/1/93	31/12/93	1,233,500	584,000
			1/1/94	31/12/94	1,011,000	486,400
			1/1/95	31/12/95	294,000	0

APPENDIX G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1977

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes	
			From	To	Column A (Annual Barrels)	Column B (Annual Barrels)
PROPANE (Cont'd)						
3. PanCanadian Gas Products Ltd.	GL-34 (AO-3)(e)	Gretna, Man., Sarnia or Windsor, Ont.	5/6/73(f)	31/12/73	2,415,000	2,238,000
			1/1/74	31/12/74	2,412,500	2,207,500
			1/1/75	31/12/75	2,380,000	2,149,000
			1/1/76	31/12/76	2,330,000	2,075,000
			1/1/77	31/12/77	2,295,500	2,009,500
			1/1/78	31/12/78	2,259,500	401,500
			1/1/79	31/12/79	2,223,500	401,500
			1/1/80	31/12/80	2,186,000	401,500
			1/1/81	31/12/81	2,126,500	401,500
			1/1/82	31/12/82	2,005,000	401,500
			1/1/83	31/12/83	1,833,000	401,500
			1/1/84	31/12/84	1,706,500	401,500
			1/1/85	31/12/85	1,476,500	401,500
			1/1/86	31/12/86	1,179,500	335,000
			1/1/87	31/12/87	906,500	25,000
			1/1/88	31/12/88	651,000	0
			1/1/89	31/12/89	388,000	0
			1/1/90	31/12/90	144,000	0
4. Dome Petroleum Limited	GL-46 (AO-2)(g)	Windsor, Ont. Sarnia, Ont.	1/4/74	31/3/75	1,930,000	
			1/4/75	31/3/76	2,560,000	
			1/4/76	31/3/77	2,990,000	
			1/4/77	31/3/78	3,930,000	
			1/4/78	31/3/79	3,900,000	
			1/4/79	31/3/80	3,790,000	
			1/4/80	31/3/81	3,450,000	
			1/4/81	31/3/82	2,950,000	
			1/4/82	31/3/83	2,400,000	
			1/4/83	31/3/84	2,100,000	

- (a) This licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-26 with Licence No. GL-31 whereby certain quantities of the propane exported near Gretna, Manitoba and Elmore, Saskatchewan is imported into and exported from Canada near Sarnia and Windsor, Ontario. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import that volume of propane authorized for export during that period as provided by the licence. The Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.
- (b) This period includes the volumes of propane exported and imported pursuant to Licences GL-26 and GL-31 during the part of 1973 prior to the day of issue of this order.
- (c) This Licence authorized additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-27 with Licence No. GL-32. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.
- (d) This period includes the volumes of propane exported and imported pursuant to Licences GL-27 and GL-32 during the part of 1973 prior to the day of the issue of this order.
- (e) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.
- (f) This period includes the volumes of propane exported and imported pursuant to Licences GL-33 and GL-34 during the part of 1973 prior to the day of the issue of this order.
- (g) This is an import-export licence whereby no propane may be exported at Windsor, Ontario that has not been imported at Sarnia, Ontario. Notwithstanding the above export or import points, the Licensee may export propane at Sarnia, Ontario, and import propane at Windsor, Ontario, during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.

APPENDIX G-IV (Cont'd)

CURRENT LICENCES TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1977

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Export Volumes (Barrels)
			From	To	
ETHANE					
1. Dome Petroleum Limited	GL-45 (AO-3)(a)	Windsor, Ont.	1/ 4/74 1/ 4/75 1/ 4/76 1/ 4/77 1/ 4/78 1/ 4/79 1/ 4/80 1/ 4/81 1/ 4/82 1/ 4/83	31/ 3/75 31/ 3/76 31/ 3/77 31/ 3/78 31/ 3/79 31/ 3/80 31/ 3/81 31/ 3/82 31/ 3/83 31/ 3/84	1,830,000 1,830,000 1,830,000 1,940,000 3,357,000 3,400,800 3,467,000 3,577,000 3,617,000 3,480,800
2. Dome Petroleum Limited	GL-47 (AO-3)	Elmore, Sask.	1/11/76(b) 1/ 1/77 1/ 1/78 1/ 1/79 1/ 1/80 1/ 1/81 1/ 1/82 1/ 1/83	31/12/76 31/12/77 31/12/78 31/12/79 31/12/80 31/12/81 31/12/82 31/12/83	(b) 14,000,000 13,900,000 13,000,000 9,900,000 8,900,000 7,500,000 2,900,000
3. Dome Petroleum Limited	GO-1-76	Elmore, Sask.(c)	1/ 1/78	31/12/85	25,000 Barrels per year

(a) This licence authorizes an export near Windsor, Ontario. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Sarnia, Ontario. Notwithstanding the above export and import points, the licensee may export ethane at Sarnia, Ontario, and import ethane at Windsor, Ontario during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.

(b) This licence provides for two commencement dates, namely, the first delivery of ethane into Cochin Pipelines Ltd. or November 1, 1976, whichever is earlier. The quantity of ethane that may be exported in the period in 1976 ending on December 31, 1976, shall not exceed that quantity which is the same percentage of 14,100,000 barrels, that the number of days between the date of commencement of the licence term and December 31, 1976 is to 365 days.

(c) The Licensee may export under this order only those quantities of ethane which are to be imported and shall import the same quantity of ethane so exported.

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Export Volumes (Barrels)
			From	To	
ETHYLENE					
1. Dow Chemical of Canada Limited	EYL-1-76	Elmore, Sask.	1/ 1/78	31/12/97	350,000,000 lbs./yr.
2. Dow Chemical of Canada Limited	EYL-2-76	Elmore, Sask.(a)	1/ 1/78	31/12/97	150,000,000 lbs./yr.

(a) This licence authorizes an export at Elmore, Saskatchewan and such ethylene exported under this Order shall be imported into Canada at Windsor, Ontario.

APPENDIX G-V

EXPORTS OF NATURAL GAS

Exporter and Licence/Order	Maximum (MMcf)										
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/72	1973	1974	1975	1976	1977	Cumulative to 31/12/77	Total Authorized Exports	Remaining ^(a) Under Licences
1. TransCanada PipeLines Limited GL-1(AO-9)(c)	223,000	74,000	860,068	73,687	74,390	73,487	74,102	72,320	1,228,054	1,410,000	181,946
2. TransCanada PipeLines Limited GL-2(AO-7)	96,900 ^(b)	20,663 ^(b)	62,415	—	—	—	—	—	62,415	N/S	N/A
3. Alberta & Southern Gas Co. Ltd. GL-3(AO-9)(c)	458,750	153,270	1,702,337	157,353	138,837	151,464	158,273	157,787	2,466,051	3,826,000	1,359,949
4. Westcoast Transmission Company Limited GL-4(AO-10)	152,000	51,000	503,934	50,144	46,196	48,324	46,465	48,385	743,448	1,020,000	276,552
5. Canadian-Montana Pipe Line Company GL-5(AO-11)(c)(d)	36,000	10,950 ^(e)	121,677	11,525	11,032	10,777	10,885	7,777	173,673	273,750	100,077
6. Niagara Gas Transmission Limited GL-6(AO-17) 23/12/70 - 31/12/71 01/11/76 - 31/10/77	23,000 30,000 30,000	5,520 6,700 6,000	41,626	5,546	5,556	5,497	5,537	5,955	69,717	121,190	51,473
7. Canadian-Montana Pipe Line Company GL-8(AO-1)	99,460	19,892	212,166	7,834	—	—	—	—	220,000	220,000	N/A
8. Alberta & Southern Gas Co. Ltd. GL-16(AO-7)(c) 01/11/66 - 31/10/67 01/11/67 - 31/10/89	113,125 226,250	37,415 74,830	393,958	77,730	74,162	76,984	78,606	78,594	780,034	1,614,000	833,966
9. Canadian-Montana Pipe Line Company GL-17(AO-9)(c)(d) 01/11/66 - 31/10/67 01/11/67 - 31/10/89	12,000 24,000	3,650 7,300 ^(f)	40,791	7,674	7,355	7,185	7,256	11,242	81,503	164,250	82,747
10. TransCanada PipeLines Limited GL-18 (AO-11) 22/11/65 - 31/10/68(g) 01/11/65 - 31/10/89	25,000 143,000	8,000 52,300	232,185	42,615	42,779	42,182	42,578	42,461	444,800	1,200,000	755,200
11. TransCanada PipeLines Limited GL-19 (AO-10)	17,700	6,500	13,527	3,912	4,891	4,124	4,099	4,263	34,816	108,000	73,184
12. TransCanada PipeLines Limited GL-20(AO-15)(c)	87,600	32,100	120,218	31,974	31,974	31,974	32,072	31,974	280,186	765,000	484,814
13. TransCanada PipeLines Limited GL-21(AO-5)(h)	N/S	247,782	853,267	227,879	214,189	210,268	218,505	210,535	1,934,643	6,000,000	4,065,357
14. TransCanada PipeLines Limited GL-22(AO-4)	N/S	N/S	2,592	—	—	—	—	—	2,592	3,000	N/A
15. Westcoast Transmission Company Limited PC1955-958(AO-2)(i) 23/06/55 - 31/12/65 01/01/66 - 02/10/77	N/S 303,450	N/S N/S	1,356,151	—	—	—	—	—	1,356,151	N/A N/A	N/A N/A
16. Westcoast Transmission Company Limited GL-23(AO-7)(i) 01/11/66 - 31/10/67 01/11/67 - 21/02/68 22/02/68 - 31/10/88	101,150 101,150 202,300	36,920 24,579 74,040	257,112	—	—	—	—	—	257,112	1,514,720	N/A
17. Alberta & Southern Gas Co. Ltd. GL-24(AO-9)(c) 01/11/68 - 31/10/69 01/11/69 - 31/10/91 01/11/91 - 31/10/93	121,000 236,000 135,400	38,900 77,900 44,600	233,339	83,474	83,076	84,889	86,036	84,101	654,915	1,841,900	1,186,985

APPENDIX G-V (Cont'd)

EXPORTS OF NATURAL GAS

Exporter and Licence/Order	Maximum (MMcf)										
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/72	1973	1974	1975	1976	1977	Cumulative to 31/12/77	Total Authorized Exports	Remaining ^(a) Under Licences
18. Canadian-Montana PipeLine Company GL-25(AO-12)(c)(d) 01/11/68 - 31/10/69 01/11/69 - 31/10/91 01/11/91 - 31/10/93 27/03/73 - 14/05/75 14/05/75 - 14/05/76 14/05/76 - 14/05/77	12,000 24,000 13,800 99,460 99,460 49,730	3,650 7,300 4,200 19,892 10,000 5,000	26,105	19,190	26,047	20,626	13,864	7,007	112,839	172,650	59,811
19. ICG Transmission Limited GL-28(AO-9)(c)	2,834	337	150	248	325	390	365	312	1,790	8,084	6,294
20. ICG Transmission Limited GL-29(AO-11)	32,323	7,715	15,136	7,650	7,448	6,816	7,338	6,957	51,345	192,820	141,475
21. ICG Transmission Limited GL-30(AO-2)(j)	46,662	12,144	20,645	10,286	11,114	9,654	10,605	10,969	73,273	299,990	226,717
22. Alberta & Southern Gas Co. Ltd. GL-35(AO-6)(c)	205,000	67,500	143,075	68,804	61,652	66,896	69,548	69,614	479,589	1,012,500	532,911
23. Canadian-Montana PipeLine Company GL-36(AO-7)(c)(d)	12,000	3,650	7,709	3,842	3,677	3,592	3,628	2,592	25,040	54,750	29,710
24. TransCanada PipeLines Limited GL-37(AO-9)(c)	195,800	71,663	152,242	71,467	71,467	71,467	71,686	71,467	509,796	1,433,356	923,560
25. TransCanada PipeLines Limited GL-38(AO-7)	50,000	18,300	38,882	18,250	18,250	18,250	18,300	18,250	130,182	366,000	235,818
26. TransCanada PipeLines Limited GL-39(AO-7)	7,200	2,635	5,646	2,630	2,628	2,628	2,635	2,628	18,795	52,704	33,909
27. Westcoast Transmission Company Limited GL-40(AO-1)(i)	75,863	27,770	2,560	—	—	—	—	—	2,560	554,200	551,640
28. Westcoast Transmission Company Limited GL-41(AO-15)(i) 01/11/71 - 31/10/72 01/11/72 - 31/10/89	733,338 809,200	254,982 281,359	298,918	267,753	240,462	214,119	214,590	234,075	1,469,917	5,042,860	3,572,943
29. TransCanada PipeLines Limited GL-42(AO-1)(h) 15/04/71 - 31/10/71 01/11/71 - 31/10/94	N/S N/S	8,218 92,218	99,968	84,811	79,716	78,256	81,322	78,356	502,429	2,129,232	1,626,803
30. TransCanada PipeLines Limited GL-43(AO-8)	N/S	17,000	7,883	13,914	6,838	5,200	5,772	3,092	42,691	340,000	297,301
31. Consolidated Natural Gas Limited GL-44(k)	150,000	45,000	2,669	28,336	19,503	15,725	14,252	13,438	93,923	669,000	575,077
32. Patrick T. Buckley GO-1-68(l)	1,000	5	22	—	—	—	—	—	22	N/S	N/A
33. Western Decalta Petroleum Limited MO-49-75(AO-1)	1,000	5	—	—	—	—	—	—	—	N/S	N/A
34. Union Gas Company of Canada Limited EO-2-63	N/S	N/S	55	—	—	—	—	—	55	200	N/A
35. TransCanada PipeLines Limited EO-1-70	N/S	N/S	25	—	—	—	—	—	25	40	N/A
36. TransCanada PipeLines Limited EO-6-70	N/S	N/S	124	—	—	—	—	—	124	125	N/A
37. TransCanada PipeLines Limited EO-2-72	N/S	N/A	120	—	—	—	—	—	120	N/S	N/A
38. TransCanada PipeLines Limited EO-5-72	40,000	N/S	21	—	—	—	—	—	21	40	N/A

APPENDIX G-V (Cont'd)

EXPORTS OF NATURAL GAS

Exporter and Licence/Order	Maximum (MMcf)										
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/72	1973	1974	1975	1976	1977	Cumulative to 31/12/77	Total Authorized Exports	Remaining ^(a) Under Licences
39. Gaz Métropolitain, inc. EO-2-70(AO-1)	N/A	N/A	151		-	-	-	-	151	N/A	N/A
40. Gaz Métropolitain, inc. EO-3-70(AO-1)	N/A	N/A	108	-	-	-	-	-	108	N/A	N/A
41. Gaz Métropolitain, inc. EO-5-70(AO-1)	N/A	N/A	614	-	-		-	-	614	N/A	N/A
42. Gaz Métropolitain, inc. EO-8-70	N/A	N/A	150	-	-	-	-	-	150	N/A	N/A
43. Gaz Métropolitain, inc. EO-2-71	N/A	N/A	491	-	-	-	-	-	491	N/A	N/A
44. Gaz Métropolitain, inc. EO-3-71	N/A	N/A	537	-	-	-		-	537	N/A	N/A
45. Gaz Métropolitain, inc. EO-4-71	N/A	N/A	84	-	-	-	-	-	84	N/A	N/A
46. Gaz Métropolitain, inc. EO-7-72	N/A	N/A	247	-	-	-	-	-	247	N/A	N/A
47. Gaz Métropolitain, inc. EO-1-73	N/A	N/A	-	10	-	-	-	-	10	N/A	N/A
48. Gaz Métropolitain, inc. GO-2-73	N/A	N/A	-	708	-	-	-	-	708	N/A	N/A
49. TransCanada PipeLines Limited EO-1-74	150	N/A	-	-	79	-	-	-	79	N/A	N/A
50. TransCanada PipeLines Limited EO-2-74	N/S	N/A	-	-	67	-	-	-	67	N/A	N/A
51. TransCanada PipeLines Limited EO-1-75	N/A	N/A	-	-	-	210	-	-	210	480	N/A
52. TransCanada PipeLines Limited EO-2-75	N/A	N/A	-	-	-	2	-	-	2	40	N/A
53. TransCanada PipeLines Limited EO-1-77(AO-1)	N/A	N/A	-	-	-	-	-	30,000	30,000	30,000	N/A
54. Gaz Métropolitain, inc. GO-1-77	N/A	N/A	-	-	-	-	-	198	198	215	N/A
55. Westcoast Transmission Company EO-2-77	N/A	N/A	-	-	-	-	-	3,100	3,100	3,100	N/A
56. Westcoast Transmission Company EO-3-77	N/A	N/A	-	-	-	-	-	877	877	1,200	N/A
57. TransCanada PipeLines Limited EO-4-77(AO-1)	N/A	N/A	-	-	-	-	-	1,300	1,300	3,300	N/A
58. Canadian-Montana PipeLine Company EO-5-77	N/A	N/A	-	-		-	-	3,000	3,000	3,000	N/A
59. TransCanada PipeLines Limited EO-6-77	N/A	N/A	-	-	-	-	-	599	599	600	N/A
60. Gaz Métropolitain, inc. GO-2-77	N/A	N/A	-	-	-	-	-	150	150	150	N/A
61. Gaz Métropolitain, inc. GO-3-77(AO-2)	N/A	N/A	-	-		-	-	224	224	243	N/A
62. TransCanada PipeLines Limited EO-7-77	N/A	N/A	-	-	-	-	-	-	-	400	N/A
Gross Exports			7,831,700	1,379,246	1,283,710	1,260,986	1,278,319	1,313,599	14,347,560		

APPENDIX G-V (Cont'd)

EXPORTS OF NATURAL GAS

Exporter and Licence/Order	Maximum (MMcf)										
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/72	1973	1974	1975	1976	1977	Cumulative to 31/12/77	Total Authorized Exports	Remaining ^(a) Under Licences
Deduct Re-Export of Imports:											
Item 31, GL-44(k)			2,669	28,336	19,503	15,725	14,252	13,438	93,923		
Item 37, EO-2-72			120	—	—	—	—	—	120		
Item 38, EO-5-72			21	—	—	—	—	—	21		
Item 49, EO-1-74			—	—	79	—	—	—	79		
Item 50, EO-2-74			—	—	67	—	—	—	67		
Item 51, EO-1-75			—	—	—	210	—	—	210		
Item 52, EO-2-75			—	—	—	2	—	—	2		
Item 62, EO-7-77			—	—	—	—	—	—	—		
Deduct Exports for Re-Import:											
Item 13, GL-21(h)			853,267	227,879	214,189	210,268	218,505	210,535	1,934,643		
Item 21, GL-30(j)			20,645	10,286	11,114	9,654	10,605	10,969	73,273		
Item 29, GL-42(h)			99,968	84,811	79,716	78,256	81,322	78,356	502,429		
Net Exports			6,855,010	1,027,934	959,042	946,871	953,635	1,000,301	11,742,793		

- (a) It may not be possible to export total volumes remaining under licences due to restrictions on peak day and annual volumes.
- (b) This licence authorizes an export of 30,000 MMcf in the period 01/11/70 to 31/03/72 and an additional export of 15,000 MMcf on an interruptible basis in the year commencing 1 November 1970.
- (c) Volumes exceed licenced annual amounts due to make-up of accumulated shortfalls from previous years as authorized by licence.
- (d) Licences GL-5, GL-17, GL-25 and GL-36 must not exceed a combined export total at Aden of 99,460 MMcf per day or 19,892,000 MMcf in any consecutive 12-month period.
- (e) This licence authorizes an additional 3,000 MMcf per year during the period 14/05/77 to 14/05/82.
- (f) This licence authorizes an additional 2,000 MMcf per year during the period 14/05/77 to 14/05/82.
- (g) Interruptible.
- (h) This is an export at Emerson, Manitoba for re-import at Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.
- (i) On the day that first delivery of gas was made under licence GL-41, licences PC1955-958, GL-23 and GL-40 were revoked.
- (j) This is an export at Sprague, Manitoba for re-import at Rainy River, Ontario.
- (k) This is a re-export at Emerson, Manitoba for volumes imported under licence GL1-S at Willow Creek, Saskatchewan.
- (l) Formerly licence GL-7.
- N/S Not specified.
- N/A Not applicable.

APPENDIX G-VI

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE ETHANE AND ETHYLENE ISSUED DURING 1977

Type of Licence or Order	Licensee	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum	
				From	To	Annual	Term
Natural Gas Import (Section 82)	1. Tenneco LNG Inc.	GL1-7	Saint John, N.B.	*	**	418,680,000 gigajoules (100 B thermies)	8,373,600,000 gigajoules (2,000 B thermies)
Order – Natural Gas Import Part VI Regulations – Section 17	1. TransCanada PipeLines Ltd.	EO-7-77 ^(a)	Niagara Falls, Ont.	20/9/77	10/10/77	400 MMcf	

* Date of Initial Delivery.

** Twenty years and six months after the date of First Regular Delivery or a total term not exceeding 25 years.

(a) This order stipulates that the same quantity of gas imported by the Licensee under the terms of this order shall be returned prior to December 31, 1977.

Type of Licence or Order	Licensee	Order Number	Date of Issue	Comments
Orders Amending Existing Ethane Import Orders Part VI Regulations – Section 17	1. Dome Petroleum Limited	AO-3-GL-45	1/4/77	(i) Amendment varying the total and the annual volumes of ethane authorized, to be imported and exported.

APPENDIX G-VII

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1977

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Imports Volumes		
			From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)
Natural Gas							
1. Border Utilities Limited	GO-2-66(AO-1)	Coutts, Alta.	2/ 6/66	14/ 9/85	1,000	N/S	N/S
2. Canadian Western Natural Gas Company Limited	GO-6-66(AO-1)	Coutts, Alta.	22/ 9/66	14/ 9/85	1,000	N/S	N/S
3. TransCanada Pipe Lines Limited	GL-21(AO-5)(a)	(Sault Ste. Marie and Sarnia, Ont.)	5/11/68	31/10/91	N/S	247,782	6,000,000
4. ICG Transmission Limited	GL-30(AO-2)(b)	Rainy River, Ont.	1/11/70	31/10/95	46,662	12,144	299,990
5. TransCanada Pipe Lines Limited	GL-42(AO-1)(a)	(Sault Ste. Marie, and Sarnia, Ont.)	15/ 4/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,128 92,218	2,129,232
6. Consolidated Natural Gas Limited	GL1-5(AO-1)	N/S	15/ 3/72	31/10/92	150,000	45,000	669,000
7. Canadian Lowell Gas Limited	GL1-6	Niagara Falls, Ont.	10/ 4/75(d)	31/10/87	12,500	1,500(c)	N/S
8. Tenneco LNG Inc.	GL1-7	Saint John, N.B.	(e)	(f)	N/S	418.68 x 10 ⁶ GJ	8 373.6 x 10 ⁶ GJ

(a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(b) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(c) This quantity (in any one year) is to be imported during the consecutive seven-month period, commencing on the 1st day of April and ending on the 31st day of October in any period.

(d) An order MO-31-75 was issued June 25, 1975, fixing the 31st day of March 1976, as the day on or before which the licensee shall file with the Board all the requisite authorizations of the U.S. Federal Power Commission. A subsequent Order No. MO-11-76 was issued, dated Feb. 11, 1976 extending for two years this date to March 31, 1978.

(e) From the date of Initial Delivery.

(f) Twenty years and six months after the date of First Regular Delivery or a total term from Initial Delivery not exceeding 25 years.

N/S Not specified.

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Annual Volumes	
			From	To	Column A (Bbls.)	Column B (Bbls.)
PROPANE						
1. Dome Petroleum Limited	GL-31 (AO-4)(a)	Sarnia, Ont.	5/6/73(b)	31/12/73	6,287,500	5,827,500
			1/1/74	31/12/74	5,991,500	5,481,500
			1/1/75	31/12/75	5,913,000	5,338,000
			1/1/76	31/12/76	5,751,500	5,121,500
			1/1/77	31/12/77	5,582,500	4,887,500
			1/1/78	31/12/78	5,457,000	4,692,000
			1/1/79	31/12/79	5,357,000	4,517,000
			1/1/80	31/12/80	5,263,000	4,338,000
			1/1/81	31/12/81	5,114,000	4,134,000
			1/1/82	31/12/82	4,949,000	3,909,000
			1/1/83	31/12/83	4,665,500	839,500
			1/1/84	31/12/84	4,316,500	839,500
			1/1/85	31/12/85	3,898,000	839,500
			1/1/86	31/12/86	3,362,000	839,500
			1/1/87	31/12/87	2,930,500	906,000
			1/1/88	31/12/88	2,489,000	1,216,000
			1/1/89	31/12/89	2,078,000	1,241,000
			1/1/90	31/12/90	1,690,000	1,065,000
			1/1/91	31/12/91	1,396,000	1,045,000
			1/1/92	31/12/92	1,339,500	1,040,000
			1/1/93	31/12/93	1,233,500	1,025,000
			1/1/94	31/12/94	1,011,000	655,000
			1/1/95	31/12/95	294,000	0

APPENDIX G-VII (Cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1977

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Annual Volumes	
			From	To	Column A (Bbls.)	Column B (Bbls.)
2. Amoco Canadian Petroleum Company Ltd.	GL-32 (AO-2)(c)	Sarnia, Ont.	5/6/73(d)	31/12/73	3,872,500	3,589,500
			1/1/74	31/12/74	3,579,000	3,274,000
			1/1/75	31/12/75	3,533,000	3,189,000
			1/1/76	31/12/76	3,421,500	3,046,500
			1/1/77	31/12/77	3,287,000	2,878,000
			1/1/78	31/12/78	3,197,500	584,000
			1/1/79	31/12/79	3,133,500	584,000
			1/1/80	31/12/80	3,077,000	584,000
			1/1/81	31/12/81	2,987,500	584,000
			1/1/82	31/12/82	2,943,500	584,000
			1/1/83	31/12/83	2,832,500	584,000
			1/1/84	31/12/84	2,610,000	584,000
			1/1/85	31/12/85	2,401,500	584,000
			1/1/86	31/12/86	2,182,500	584,000
			1/1/87	31/12/87	2,024,000	584,000
			1/1/88	31/12/88	1,838,000	584,000
			1/1/89	31/12/89	1,690,000	584,000
			1/1/90	31/12/90	1,546,000	584,000
			1/1/91	31/12/91	1,396,000	584,000
			1/1/92	31/12/92	1,339,500	584,000
			1/1/93	31/12/93	1,233,500	584,000
			1/1/94	31/12/94	1,011,000	486,400
			1/1/95	31/12/95	294,000	0
3. PanCanadian Gas Products Ltd.	GL-34 (AO-3)(e)	Sarnia, Ont.	5/6/73(f)	31/12/73	2,415,000	2,238,000
			1/1/74	31/12/74	2,412,500	2,207,500
			1/1/75	31/12/75	2,380,000	2,149,000
			1/1/76	31/12/76	2,330,000	2,075,000
			1/1/77	31/12/77	2,295,500	2,009,500
			1/1/78	31/12/78	2,259,500	401,500
			1/1/79	31/12/79	2,223,500	401,500
			1/1/80	31/12/80	2,186,000	401,500
			1/1/81	31/12/81	2,126,500	401,500
			1/1/82	31/12/82	2,005,000	401,500
			1/1/83	31/12/83	1,833,000	401,500
			1/1/84	31/12/84	1,706,500	401,500
			1/1/85	31/12/85	1,496,500	401,500
			1/1/86	31/12/86	1,179,500	335,000
			1/1/87	31/12/87	906,500	25,000
			1/1/88	31/12/88	651,000	0
			1/1/89	31/12/89	388,000	0
			1/1/90	31/12/90	144,000	0

APPENDIX G-VII (Cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1977

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Annual Volumes	
			From	To	Column A (Bbls.)	Column B (Bbls.)
4. Dome Petroleum Limited	GL-46 (AO-2)(g)	Sarnia, Ont.	1/4/74	31/ 3/75	1,930,000	
			1/4/75	31/ 3/76	2,560,000	
			1/4/76	31/ 3/77	2,990,000	
			1/4/77	31/ 3/78	3,930,000	
			1/4/78	31/ 3/79	3,900,000	
			1/4/79	31/ 3/80	3,790,000	
			1/4/80	31/ 3/81	3,450,000	
			1/4/81	31/ 3/82	2,950,000	
			1/4/82	31/ 3/83	2,400,000	
			1/4/83	31/ 3/84	2,100,000	

- (a) This licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under licence No. GL-26 with Licence No. GL-31 whereby certain quantities of the propane exported near Gretna, Manitoba and Elmore, Saskatchewan is imported into and exported from Canada near Sarnia and Windsor, Ontario. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import that volume of such propane exported during that period as provided by the Licence. The Licensee shall import all such propane exported which is excess of the volumes stipulated in Column B.
- (b) This period includes the volumes of propane exported and imported pursuant to Licences GL-26 and GL-31 during the part of 1973 prior to the date of issue of this order.
- (c) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under licence No. GL-27 with Licence No. GL-32. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.
- (d) This period includes the volumes of propane exported and imported pursuant to Licences GL-27 and GL-32 during the part of 1973 prior to the day of the issue of this order.
- (e) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof such propane exported during that period provided the licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.
- (f) This period includes the volumes of propane exported and imported pursuant to Licences GL-33 and GL-34 during the part of 1973 prior to the day of the issue of this order.
- (g) This is an import-export licence whereby no propane may be exported at Windsor, Ontario, that has not been imported at Sarnia, Ontario. Notwithstanding the above export and import points, the Licensee may export propane at Sarnia, Ontario, and import propane at Windsor, Ontario, during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.

APPENDIX G-VII (Cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1977

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Volume Barrels
			From	To	
Ethane					
1. Dome Petroleum Limited	GL-45(AO-3)(a)	Sarnia, Ont.	1/4/74	31/3/75	1,830,000
			1/4/75	31/3/76	1,830,000
			1/4/76	31/3/77	1,830,000
			1/4/77	31/3/78	1,940,000
			1/4/78	31/3/79	3,357,000
			1/4/79	31/3/80	3,400,800
			1/4/80	31/3/81	3,467,000
			1/4/81	31/3/82	3,577,000
			1/4/82	31/3/83	3,617,000
			1/4/83	31/3/84	3,480,800
2. Dome Petroleum Limited	GO-1-76	Elmore, Sask.(b)	1/1/78	31/12/85	25,000 Barrels per yr.

(a) This licence authorizes an import near Sarnia, Ontario. The quantity of ethane imported under the authority of this licence shall be equal to the quantities of ethane which the licensee exports near Windsor, Ontario. Notwithstanding the export and import points specified in Licence GL-45, the Licensee may export ethane at Sarnia, Ontario, and import ethane at Windsor, Ontario during a specified period terminating the day that leave to open the pipeline authorized under certificate is granted by the Board.

(b) The Licensee may export under this order only those quantities of ethane which are to be imported and shall import the same quantity of ethane so exported.

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Volume Barrels
			From	To	
Ethylene					
1. Dow Chemical of Canada Limited	EYL-2-76	Elmore, Sask.(a)	1/1/78	31/12/97	150,000,000 lbs./yr.

(a) This licence authorizes an export at Elmore, Sask. and such ethylene exported under this Order shall be imported into Canada at Windsor, Ontario.

APPENDIX G-VIII

IMPORTS OF NATURAL GAS

Importer and Licence/Order	Maximum (MMcf)										
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/72	1973	1974	1975	1976	1977	Cumulative to 31/12/77	Total Authorized Imports	Remaining ^(a) Under Licences
1. Coutts Gas Company Limited PC1955-1742	N/S	120	797	—	—	—	—	—	797	2,340	N/A
2. Border Utilities Ltd. GO-2-66 (AO-1)	1,000	N/S	238	32	30	35	29	30	394	N/S	N/A
3. Canadian Western Natural Gas Company Ltd. GO-6-66 (AO-1)	1,000	N/S	521	55	1	31	16	1	625	N/S	N/A
4. Union Gas Company of Canada Limited PC1956-1848	N/S	5,500	72,563	—	—	—	—	—	72,563	N/S	N/A
5. Union Gas Company of Canada Limited GLI-1	55,000	15,500	97,737	14,736	13,231	10,153	4,007	—	139,864	167,042 ^(b)	N/A
6. TransCanada PipeLines Limited GLI-2 (AO-2)	N/S	25,500	77,166	—	—	—	—	—	77,166	86,500	N/A
01/11/65 — 01/11/66	N/S	30,400									
01/11/66 — 01/11/67	N/S	15,300									
01/11/67 — 01/11/68	N/S	10,200									
01/11/68 — 01/11/69	N/S	5,100									
01/11/69 — 01/11/70	N/S	5,100									
7. Tecumseh Gas Storage Limited GLI-3	20,000	3,000	5,896	—	—	—	—	—	5,896	5,896 ^(b)	N/A
8. TransCanada PipeLines Limited GLI-4 (AO-6)	N/S	N/S	79,029	—	—	—	—	—	79,029	82,303	N/A
9. Consolidated Natural Gas Limited GLI-5 (AO-1) (c)	150,000	45,000	2,669	28,604	19,663	15,769	14,654	13,847	95,206	669,000	573,794
10. TransCanada PipeLines Limited GL-21 (AO-5) (d)	N/S	247,782	852,363	228,608	214,392	209,337	218,505	210,535	1,933,740	6,000,000	4,066,260
11. ICG Transmission Limited GL-30 (AO-2) (e)	46,662	12,144	20,645	10,286	11,114	9,654	10,605	10,969	73,273	299,990	226,717
12. TransCanada PipeLines Limited GL-42 (AO-1) (d)	N/S	8,218	99,968	85,082	79,791	77,910	81,322	78,356	502,429	2,129,232	1,626,803
15/04/71 — 31/10/71	N/S	92,218									
01/11/71 — 31/10/94	N/S										
13. TransCanada PipeLines Limited EO-2-62	N/S	N/S	2	—	—	—	—	—	2	5	N/A
14. TransCanada PipeLines Limited EO-1-63	70,000	N/S	199	—	—	—	—	—	199	1,000	N/A
15. Union Gas Company of Canada Limited EO-2-63	N/S	N/S	55	—	—	—	—	—	55	55	N/A
16. Union Gas Company of Canada Limited EO-3-63	N/S	N/S	1,083	—	—	—	—	—	1,083	1,965 ^(b)	N/A
17. TransCanada PipeLines Limited EO-1-64	140,000	N/S	2,511	—	—	—	—	—	2,511	2,500	N/A
18. TransCanada PipeLines Limited EO-2-64 (AO-1)	150,000	N/S	1,756	—	—	—	—	—	1,756	3,450	N/A
19. Union Gas Company of Canada Limited EO-2-66 (AO-1)	N/S	N/S	7,861	—	—	—	—	—	7,861	7,861 ^(b)	N/A
20. Union Gas Company of Canada Limited EO-1-67	N/S	N/S	7,861	—	—	—	—	—	7,861	7,861 ^(b)	N/A
21. TransCanada PipeLines Limited EO-2-67	N/S	N/S	389	—	—	—	—	—	389	500	N/A
22. Westcoast Transmission Company Limited EO-4-70	N/A	N/A	1	—	—	—	—	—	1	N/A	N/A

APPENDIX G-VIII (Cont'd)

IMPORTS OF NATURAL GAS

Importer and Licence/Order	Maximum (MMcf)										
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/72	1973	1974	1975	1976	1977	Cumulative to 31/12/77	Total Authorized Imports	Remaining Under Licences
23. TransCanada PipeLines Limited EO-1-72	100,000	N/A	121	—	—	—	—	—	121	N/S	N/A
24. TransCanada PipeLines Limited EO-4-72	40,000	N/A	20	—	—	—	—	—	20	40	N/A
25. TransCanada PipeLines Limited EO-1-74	150	N/A	—	—	79	—	—	—	79	N/S	N/A
26. TransCanada PipeLines Limited EO-2-74	N/S	N/A	—	—	66	—	—	—	66	N/S	N/A
27. TransCanada PipeLines Limited EO-1-75	120,000	N/A	—	—	—	208	—	—	208	480	N/A
28. TransCanada PipeLines Limited EO-2-75	4,000	N/A	—	—	—	3	—	—	3	40	N/A
29. TransCanada PipeLines Limited EO-7-77	N/A	N/A	—	—	—	—	—	—	—	400	N/A
Gross Imports			1,331,451	367,403	338,367	323,100	329,138	313,738	3,003,197		
Deduct Imports for Re-Exports:											
Item 9, GLI-5 (c)			2,669	28,604	19,663	15,769	14,654	13,847	95,206		
Item 23, EO-1-72			121	—	—	—	—	—	121		
Item 24, EO-4-72			20	—	—	—	—	—	20		
Item 25, EO-1-74			—	—	79	—	—	—	79		
Item 26, EO-2-74			—	—	66	—	—	—	66		
Item 27, EO-1-75			—	—	—	208	—	—	208		
Item 28, EO-2-75			—	—	—	3	—	—	3		
Item 29, EO-7-77			—	—	—	—	—	—	—		
Deduct Re-Imports of Exports:											
Item 10, GL-21 (d)			852,363	228,608	214,392	209,337	218,505	210,535	1,933,740		
Item 11, GL-30 (e)			20,645	10,286	11,114	9,654	10,605	10,969	73,273		
Item 12, GL-42 (d)			99,968	85,082	79,791	77,910	81,322	78,356	502,429		
Net Imports			355,665	14,823	13,262	10,219	4,052	31	398,052		

(a) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.

(b) Converted from "wet base" to "dry base" for purpose of comparability.

(c) The quantities of gas authorized for import by this licence near Willow Creek, Saskatchewan, are authorized to be exported at Emerson, Manitoba pursuant to Licence GL-44.

(d) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie, Ontario, to serve the Eastern Canadian market.

(e) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

N/S Not specified

N/A Not applicable

APPENDIX G-IX

EXPORTS OF PROPANE, ETHANE AND BUTANE UNDER LONG TERM LICENCES AND ORDERS — 1977

(Volume in Barrels)

Exporter	Licence or Order Number	Period		Authorized Maximum Export Quantity in Period		Actual Export in 1977	
		From	To	Gross	Net	Gross	Net
PROPANE							
1. Dome Petroleum Limited	GL-31 (AO-4)(a)	01/01/77	31/12/77	5,582,500	4,887,500	5,549,836	4,887,500
2. Amoco Canada Petroleum Company Ltd.	GL-32 (AO-2)(a)	01/01/77	31/12/77	3,287,000	2,878,000	3,287,000	2,534,568(b)
3. PanCanadian Gas Products Ltd.	GL-34 (AO-3)(a)	01/01/77	31/12/77	2,295,500	2,009,500	2,037,452	154,232
4. Dome Petroleum Limited	GL-46 (AO-2)(a)	01/04/77	31/03/78	N/A	3,930,000	N/A	1,596,232
5. Imperial Oil Limited	EPR-904-75(c)	01/01/77	31/12/77	N/A	4,589,000	N/A	2,690,270
6. Amoco Canada Petroleum Company Ltd.	EPR-907-77(c)	23/08/77	31/12/77	N/A	660,430	N/A	660,430
7. Dome Petroleum Limited	EPR-908-77(c)	20/09/77	31/12/77	N/A	1,000,000	N/A	1,000,000
8. Amoco Canada Petroleum Company Ltd.	EPR-909-77(c)	06/10/77	31/03/78	N/A	300,000	N/A	3,000,000
9. Amoco Canada Petroleum Company Ltd.	EPR-910-77(c)	25/10/77	31/12/77	N/A	994,539	N/A	994,539
10. Amoco Canada Petroleum Company Ltd.	EPR-911-77(c)	30/11/77	30/04/78	N/A	215,000	N/A	—
11. Amoco Canada Petroleum Company Ltd.	EPR-912-77(c)	01/12/77	31/01/78	N/A	308,000	N/A	304,943
ETHANE							
1. Dome Petroleum Limited	GL-45 (AO-3)(a)	01/04/77	31/03/78	N/A	1,940,000	N/A	1,139,254
BUTANE							
1. Dome Petroleum Limited	EBU-1-74 (AO-1)(d)	01/04/77	31/03/78	N/A	5,190,000	N/A	1,617,043
2. Dome Petroleum Limited	EBU-132-74(e)	01/01/77	31/12/77	N/A	3,776,000	N/A	2,529,114
3. Amoco Canada Petroleum Company Ltd.	EBU-133-74(e)	01/01/77	31/12/77	N/A	4,116,800	N/A	2,894,531
4. PanCanadian Gas Products Ltd.	EBU-134-74(e)	01/01/77	31/12/77	N/A	1,346,400	N/A	1,165,463
5. Imperial Oil Limited	EBU-905-75(e)	01/01/77	31/12/77	N/A	2,753,000	N/A	1,578,086

(a) See Appendix G-III for licence particulars.

(b) Includes rail and truck movement of 504,283 barrels.

(c) This is an export-import order which allows the exportation of propane near Gretna, Manitoba and the importation of said propane near Sarnia, Ontario.

(d) This is an import-export order which allows the importation of butane near Sarnia, Ontario and the exportation of said butane near Windsor, Ontario and/or Sarnia, Ontario.

(e) This is an export-import order which allows the exportation of butane near Gretna, Manitoba and the importation of said butane near Sarnia, Ontario.

APPENDIX G-X

IMPORTS OF PROPANE, ETHANE AND BUTANE UNDER LONG TERM LICENCES AND ORDERS — 1977

(Volume in Barrels)

Importer	Licence or Order Number	Period		Authorized Maximum Import Quantity in Period	Actual Import in 1977
		From	To		
PROPANE					
1. Dome Petroleum Limited	GL-31(AO-4) ^(a)	01/01/77	31/12/77	5,582,500	4,923,586
2. Amoco Canada Petroleum Company Ltd.	GL-32(AO-2) ^(a)	01/01/77	31/12/77	3,287,000	2,782,707
3. PanCanadian Gas Products Ltd.	GL-34(AO-3) ^(a)	01/01/77	31/12/77	2,295,500	1,893,115
4. Dome Petroleum Limited	GL-46(AO-2) ^(a)	01/04/77	31/03/78	3,930,000	1,777,043
5. Imperial Oil Limited	EPR-904-75 ^(b)	01/01/77	31/12/77	4,589,000	2,690,270
6. Amoco Canada Petroleum Company Ltd.	EPR-907-77 ^(b)	23/08/77	31/01/78	660,430	660,430
7. Dome Petroleum Limited	EPR-908-77 ^(b)	20/09/77	31/01/78	1,000,000	1,000,000
8. Amoco Canada Petroleum Company Ltd.	EPR-909-77 ^(b)	06/10/77	30/04/78	300,000	300,000
9. Amoco Canada Petroleum Company Ltd.	EPR-910-77 ^(b)	25/10/77	31/01/78	994,539	994,539
10. Amoco Canada Petroleum Company Ltd.	EPR-911-77 ^(b)	30/11/77	30/04/78	215,000	—
11. Amoco Canada Petroleum Company Ltd.	EPR-912-77 ^(b)	01/12/77	31/01/78	308,000	229,875
ETHANE					
1. Dome Petroleum Limited	GL-45(AO-3) ^(a)	01/04/77	31/03/78	1,940,000	1,271,237
BUTANE					
1. Dome Petroleum Limited	EBU-1-74(AO-1) ^(c)	01/04/77	31/03/78	5,190,000	1,794,839
2. Dome Petroleum Limited	EBU-132-74 ^(d)	01/01/77	31/12/77	3,776,600	2,529,114
3. Amoco Canada Petroleum Company Ltd.	EBU-133-74 ^(d)	01/01/77	31/12/77	4,116,800	2,631,039
4. Pan Canadian Gas Products Ltd.	EBU-134-74 ^(d)	01/01/77	31/12/77	1,346,400	1,085,100
5. Imperial Oil Limited	EBU-905-75 ^(d)	01/01/77	31/12/77	2,753,000	1,578,086

(a) See Appendix G-VII for licence particulars.

(b) This is an export-import order which allows the exportation of propane near Gretna, Manitoba and the importation of said propane near Sarnia, Ontario.

(c) This is an import-export order which allows the importation of butane near Sarnia, Ontario and the exportation of said butane near Windsor, Ontario and/or Sarnia, Ontario.

(d) This is an export-import order which allows the exportation of butane near Gretna, Manitoba and the importation of said butane near Sarnia, Ontario.

APPENDIX G-XI

NET EXPORTS OF PROPANE AND BUTANE

PROPANE (Volumes in Barrels)

Exporters	1975	1976 (revised)	1977
Amerada Minerals Corp. of Canada	12,015	—	—
Amoco Bréton	—	—	21,739
Amoco Canada Petroleum Co. Ltd	2,578,506	2,943,924	3,062,988
Big Horn Supply Ltd	—	19,204	150,674
Burnwell Gas of Canada Ltd	15,504	71,206	118,815
Canadian Enterprise Gas Products Ltd	229,687	535,989	683,874
Canadian Propane Gas & Oil Ltd	225,321	58,569	47,873
Canadian Superior Oil Ltd	495,033	594,811	620,054
Canmore Mines Ltd	157,707	300,938	332,378
Chevron Standard Ltd	1,249,560	1,172,618	1,516,994
Cigas Products Ltd	370,629	271,903	537,601
Columbia Gas Development of Canada Ltd	—	650,055	286,881
C.M. Dining (Canada) Ltd	3,132	—	—
Dome Breton	—	—	55,413
Dome Petroleum Ltd	4,158,318	5,858,728	8,765,206
Dow Chemical of Canada Ltd	1,029,029	298,305	—
Elgin Petroleum Ltd	23,634	41,458	92,330
Gasbec Inc.	445,592	308,266	407,962
Gas Supply (Minneapolis) Ltd	15,759	20,993	11,172
Gavan Petroleum Ltd	40,153	66,476	13,544
Goliad Oil & Gas Co. & Goliad Ltd	370,471	356,568	59,093
Gulf Oil Canada Ltd	2,908,279	3,121,641	3,045,182
Hidrogas Ltd	199,911	—	—
Home Oil Co. Ltd	520,661	543,164	671,170
Hudson's Bay Oil & Gas Co. Ltd	502,979	409,673	429,802
Imperial Oil Ltd	868,586	1,106,132	1,971,327
Irving Oil Ltd	2,650	8,943	14,433
Koch Oil Co. Ltd	88,392	78,337	289,045
M-P Petroleum Ltd	110,380	159,351	134,288
Mobil Oil Canada Ltd	358,471	490,947	779,874
N.G.L. Supply Ltd	395,476	383,576	562,557
Northern Petro Products Ltd	118,257	116,876	333,345
Northwest LPG Supply Ltd	125,720	104,943	16,831
Pacific Petroleum Ltd	1,365,630	1,508,221	1,477,225
PanCanadian Gas Products Ltd	1,154,068	329,993	722,281
Petrosol International Ltd ^(a)	—	34,283	115,145
Real Marketing Ltd	10,307	16,936	4,307
Shaban Manufacturing Ltd	236	370	1
Shell Canada Ltd	241,000	94,153	280,703
Solar Gas Ltd	748	—	—
Stillings Canada Petroleum Company ^(b)	922,194	2,047,798	1,773,255
Sunoco Inc. ^(c)	40,000	—	29,937
Texaco Canada Ltd	—	2,064	9,881
Texaco Exploration Canada Ltd	115,509	280,611	115,812
Union Oil Co. of Canada Ltd	204,890	200,763	202,393
Union Texas of Canada Ltd	346,895	463,160	445,535
Weskem of Canada Ltd	33,088	44,651	54,531
TOTALS	22,054,377	25,116,597	30,263,451

(a) Petrosol International Ltd previous to June, 1976 exported under the name of Petrosol Ltd.

(b) Prior to September 1, 1977 exported under name of Stilling Petroleum (Canada) Ltd.

(c) Prior to June, 1977, exported under the name of Sun Oil Co. Ltd.

APPENDIX G-XI (Cont'd)

NET EXPORTS OF PROPANE AND BUTANE

BUTANE (Volumes in Barrels)

Exporters	1975	1976 (revised)	1977
Amerada Minerals Corp. of Canada	21,477	—	—
Amoco Breton	—	—	36,040
Amoco Canada Petroleum Co. Ltd	1,763,171	2,294,495	2,264,956
Belgo Canada Manufacturing Co. Ltd	14	11	—
Big Horn Supply Ltd	—	15,695	26,539
Canadian Enterprise Gas Products Ltd	304,225	338,024	288,603
Canadian Propane Gas & Oil Ltd	8,716	170	—
Canadian Superior Oil Ltd	370,366	356,393	66,682
Canmore Mines Ltd	—	—	115,689
CDC Oil & Gas Ltd	14,369	—	—
Chevron Standard Ltd	75,814	137,883	128,234
Cigas Products Ltd	274,344	483,903	162,570
Columbia Gas Development of Canada Ltd	150,000	54,905	180,122
Dome Breton	—	—	15,343
Dome Petroleum Ltd	1,814,371	3,172,496	3,328,467
Gas Supply (Minneapolis) Ltd	9,738	13,849	—
Gavan Petroleums Ltd	52,195	19,225	—
Goliad Oil & Gas Co. & Goliad Ltd	129,090	329,117	53,056
Hidrogas Ltd	115,125	—	—
Home Oil Co. Ltd	190,139	305,090	160,688
Hudson's Bay Oil & Gas Co. Ltd	1,675,091	1,709,502	1,946,849
Husky Oil Operations Ltd	185,155	225,256	265,822
Imperial Oil Ltd	386,753	673,734	577,740
Koch Oil Co. Ltd	1,450,814	1,599,525	1,385,119
M-P Petroleum Ltd	22,176	80,615	76,672
Mobil Oil Canada Ltd	1,039,083	1,137,636	695,928
Murphy Oil Co. Ltd	54,642	90,952	60,539
N.G.L. Supply Ltd	88,884	26,289	70,027
Northern Petro Products Ltd	55,376	22,847	13,130
Pacific Petroleums Ltd	908,130	740,289	650,026
PanCanadian Gas Products Ltd	323,575	181,265	293,911
Petrosol International Ltd ^(a)	—	9,001	381,413
Petrosol Ltd ^(a)	—	78,607	—
Shell Canada Ltd	2,205,776	1,850,729	1,241,082
Stillings Canada Petroleum Company ^(b)	98,407	419,432	841,457
Sunoco Inc. ^(c)	—	—	25,000
Texaco Exploration Canada Ltd	592,147	684,243	442,096
Union Oil Co. of Canada Ltd	6,640	—	—
TOTALS	14,385,803	17,051,178	15,793,800

(a) Petrosol International Ltd previous to June, 1976 exported under the name of Petrosol Ltd and Petrosol International

(b) Prior to September 1, 1977 exported under name of Stillings Petroleum (Canada) Ltd.

(c) Prior to June, 1977, exported under the name of Sun Oil Co. Ltd.

APPENDIX O-I

CERTIFICATES OF PUBLIC CONVENIENCE & NECESSITY FOR OIL PIPELINES ISSUED DURING 1977

Applicant	Facilities	Estimated Cost	Heard	Issued	Cert. No.
1. Interprovincial Pipe Line Limited	(A) Approximately 26.2 miles of 16- inch diameter line of pipe and other works (B) Tankage and modifications at Westover Pump Station all in the Province of Ontario	\$7,700,000	19-20 July 1977	16 September 1977	OC-32
2. Trans-Northern Pipe Line Company	(A) Approximately 36.6 miles of 16- inch diameter line of pipe and other works (B) New Pump Station and Pump Station modifications and other works all in the Province of Ontario	\$8,650,000	19-20 July 1977	16 September 1977	OC-33

APPENDIX O-II

ORDERS RELATING TO NEW OIL PIPELINE FACILITIES ISSUED DURING 1977 CLASS B CONSTRUCTION

Applicant	Facilities	Estimated Cost	Issued	Order No.
Harris Exploration Ltd.	Approximately 1.2 of a mile of 4-inch diameter line of pipe, and works connected therewith, including a pumping station and terminal, in the Province of Alberta.	\$ 38,000	4 May 1977	XO-1-77
Interprovincial Pipe Line Limited	Additional pipeline, being one 1,500 horsepower pumping unit, at its existing 'Glenavon Pump Station' site, in the Province of Saskatchewan.	600,000	19 July 1977	XO-2-77
Dome NGL Pipeline Ltd.	Additional pipeline, being one 1,500 horsepower pumping unit, certain metering facilities and piping modifications, and works connected therewith, at its existing 'Windsor Pump and Meter Station' site, in the Province of Ontario.	341,340	4 Nov. 1977	XO-3-77
Manito Pipelines Ltd.	Additional pipeline for temporary purposes, being one pumping unit (approximately 100 horsepower) at its existing 'Unity Pump Station' site, in the Province of Saskatchewan.	25,000	16 Dec. 1977	XO-4-77

This is construction which at the discretion of the Board may be the subject of a specific exemption order pursuant to section 49.

APPENDIX O-II (Cont'd)

ORDERS RELATING TO NEW OIL PIPELINE FACILITIES ISSUED DURING 1977 CLASS C CONSTRUCTION

Applicant	Facilities	Estimated Cost	Issued	Order No.
Montreal Pipe Line Company Limited	Certain facilities to be added to its pipeline in the Province of Quebec.	\$ 71,600	6 April 1977	XOM-1-77
Westspur Pipe Line Company	Certain facilities to be added to its pipeline in the Provinces of Saskatchewan and Manitoba.	96,300	11 May 1977	XOM-2-77
Yukon Pipelines Limited	Certain facilities to be added to its pipeline in the Province of British Columbia and in the Yukon Territory.	40,700	11 May 1977	XOM-3-77
Petroleum Transmission Company	Certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan and Manitoba.	15,000	2 June 1977	XOM-4-77
Interprovincial Pipe Line Limited	Certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Quebec.	2,122,130	14 July 1977	XOM-5-77 (as amended)
Dome NGL Pipeline Ltd.	Certain facilities to be added to their pipeline, in the Province of Ontario.	76,100	24 Aug. 1977	XOM-6-77
Dome Kerrobert Pipeline Ltd.	Certain facilities to be added to their pipeline in the Provinces of Alberta and Saskatchewan.	100,200	21 Sept. 1977	XOM-7-77
Trans Mountain Pipe Line Company Ltd.	Certain facilities to be added to its pipeline, in the Provinces of Alberta and British Columbia.	621,940	21 Sept. 1977	XOM-8-77
Trans-Northern Pipe Line Company	Certain facilities to be added to its pipeline, in the Provinces of Quebec and Ontario.	705,000	21 Sept. 1977	XOM-9-77
Wascana Pipe Line Ltd.	Certain modifications to be made to its pipeline, in the Province of Saskatchewan.	11,856.65	21 Sept. 1977	XOM-10-77
Manito Pipelines Ltd.	Certain facilities to be added to its pipeline, in the Provinces of Alberta and Saskatchewan.	58,575	4 Nov. 1977	XOM-11-77

APPENDIX O-III

EXPORTS OF CANADIAN CRUDE OIL AND EQUIVALENT TO THE UNITED STATES 1976 AND 1977

Exporter	Destination	1977		1976	
		Total Barrels for Year	Daily Average	Total Barrels for Year	Daily Average
Districts I - IV					
Amoco Oil Company	Whiting, Indiana	379,983	1,041	3,240,461	8,854
Amoco Oil Company	Wood River, Illinois	49,077	134	3,159,438	8,632
Ashland Oil & Refining Co.	N. Tonawanda, New York	454,981	1,247	2,603,325	7,113
Ashland Oil & Refining Co.	Findlay, Ohio	1,902,554	5,213	1,366,549	3,734
Ashland Oil & Refining Co.	St. Paul, Minnesota	15,269,258	41,834	18,258,576	49,887
Bay Refining Company	Bay City, Michigan	332,947	912	1,137,374	3,107
C.F. Petroleum Co.	East Chicago, Indiana	—	—	1,520,854	4,155
Canadian Hydrocarbons Ltd.	Cut Bank & Kevin, Montana	214,040	587	898,721	2,456
Clark Oil & Refining Corp.	Blue Island, Illinois	—	—	2,801,125	7,653
Cliffs Fuel Service Co.	Rapid River, Michigan	98,556	270	62,869	172
Continental Oil Company	Billings, Montana	9,894,287	27,108	11,382,473	31,100
Continental Oil Company	Denver, Colorado	—	—	162,097	443
Continental Oil Company	Wrenshall, Minnesota	5,477,333	15,006	7,268,113	19,858
Consumers Power Company	Bay City, Michigan	1,767,435	4,842	3,633,307	9,927
Consumers Power Company	Marysville, Michigan	7,723,030	21,159	9,758,904	26,664
CRA Incorporated	Phillipsburg, Kansas	—	—	33,643	92
CRA Incorporated	Scotsbluff, Nebraska	—	—	20,679	57
Crystal Refining Co. of Carson City Inc.	Carson City & Kalamazoo, Michigan	—	—	391,768	1,070
Detroit Edison Company	River Rouge, Michigan	—	—	9,000	25
Exxon Co., U.S.A.	Baton Rouge, Louisiana	106	—	—	—
Exxon Co., U.S.A.	Billings, Montana	5,294,058	14,504	5,784,241	15,804
Farmers Union Central Exchange Inc.	Laurel, Montana	4,464,766	12,232	5,311,415	14,512
Gladieux Refining Inc.	Fort Wayne, Indiana	—	—	64,701	177
Gulf Oil Corporation	Toledo, Ohio	—	—	2,118,535	5,788
Husky Oil Company	Cheyenne and Cody, Wyoming	—	—	215,743	589
Koch Refining Co.	Pine Bend, Minnesota	27,553,621	75,489	27,019,011	73,822
Lake Superior District Power	Ashland, Wisconsin	37,662	103	31,500	86
Laketon Asphalt Refining Inc.	Laketon, Indiana	154,055	422	289,309	790
Marathon Oil Company	Detroit, Michigan	—	—	1,498,900	4,095
Mobil Oil Company	Buffalo, New York	—	—	3,667,214	10,020
Mobil Oil Company	Joliet, Illinois	5,100,762	13,975	—	—
Murphy Oil Corporation	Superior, Wisconsin	9,543,234	26,146	9,585,076	26,189
Pasco Oil Company	Sinclair, Wyoming	—	—	161,698	442
Peoples Gas Light & Coke Uty.	Joliet, Illinois	—	—	243,812	666
Phillips Petroleum Co.	Kansas City, Kansas & Great Falls, Montana	—	—	723,428	1,977
Refinery Corporation	Denver, Colorado	—	—	12,129	33
Rock Island Oil Co.	Rock Island, Indiana	—	—	60,594	166
Shell Oil Company	Wood River, Illinois	—	—	478,483	1,307
Skelly Oil Company	El Dorado, Kansas	—	—	66,573	182
Standard Oil Company (Ohio)	Toledo, Ohio	1,996,156	5,469	3,722,614	10,171
Sun Oil Company	Toledo, Ohio	194,404	533	3,142,095	8,585
Tesoro Petroleum	Newcastle, Wyoming & Wolf Point, Montana	—	—	9,687	26
Texaco Incorporated	Casper, Wyoming	—	—	428,793	1,172
Texas American Petrochemical, Inc. (1)	West Branch, Michigan	76,989	211	615,332	1,684
Total Leonard Ref. Inc.	Alma, Michigan	652,244	1,787	1,979,950	5,410
Union Oil Co. of California	Lemont, Illinois	—	—	1,268,407	3,466
United Refining Co.	Warren, Pennsylvania	340,329	932	1,405,980	3,841
Other		103	—	8	—
Total Districts I-IV		98,971,970	271,156	137,615,504	375,999
District V					
Atlantic Richfield Oil Co.	Cherry Point, Washington	—	—	6,045,936	16,519
Mobil Oil Company	Ferndale, Washington	125,396	344	9,595,850	26,218
Shell Oil Company	Anacortes, Washington	165,314	453	9,921,979	27,109
Texaco Incorporated	Anacortes, Washington	—	—	7,064,714	19,303
Total District V		290,710	797	32,628,479	89,149
TOTAL		99,262,680	271,953	170,243,983	465,147

(1) Purchased from United Refining Co. in 1977

APPENDIX O-IV

LICENCES ISSUED FOR EXPORTS OF CRUDE OIL AND CONDENSATE TO THE UNITED STATES — 1977

Exporter	Barrels	
	Crude	Condensate
Amoco Canada Petroleum Company Ltd.	304,964	
Ashland Oil Canada Ltd.	14,223,419	3,642,686
Canadian Propane Gas Oil Ltd.	192,677	
Dome Petroleum Company Ltd.	37,976	8,829,422
Gibson Petroleum Company Ltd.	110,010	
Hudson's Bay Oil and Gas Company Ltd.	14,856,229	5,115,959
Husky Oil Operations Ltd.	836,164	
Imperial Oil Ltd.	8,695,206	1,214,465
Koch Oil Company Ltd.	27,451,424	34,999
Mobil Oil Company Ltd.	6,628,260	
Murphy Oil Company Ltd.	9,789,630	291,224
Pacific Petroleums Ltd.	3,000	
Petrosar Limited		120,000
Sun Oil Company Ltd.	12	2
Union Oil Company of Canada	466,710	
TOTAL	83,595,681	19,248,757

APPENDIX O-V

EXPORT CHARGES IN 1977 FOR CRUDE OIL AND REFINED PETROLEUM PRODUCTS (\$ PER BARREL)

1977	January ⁽¹⁾	February	March	April	May	June	July ⁽¹⁾	August	September	October	November	December
Light & Medium Crude Oil	4.60	4.40	4.40	4.75	5.60	5.60	5.60	4.60	4.80	4.80	5.15	5.15
Designated Heavy Crude Oils	4.20	4.00	4.00	4.35	4.35	4.35	4.35	3.35	3.55	3.55	3.90	3.90
Lloydminster Type Blends	3.75	3.55	3.55	3.90	3.90	3.90	3.90	2.90	3.10	3.10	3.45	3.45
Condensate	4.60	4.40	4.40	4.75	5.60	5.60	5.60	4.60	4.80	4.80	5.15	5.15
Motor Gasoline	3.25	3.25	3.25	4.25	4.25	4.25	4.25	4.25	3.25	3.25	3.60	3.60
Middle Distillates	3.00	3.00	3.00	4.25	4.25	4.25	4.25	4.25	3.25	3.25	3.60	3.60
Heavy Fuel Oil	4.15	4.15	4.15	4.25	4.25	4.25	4.25	4.25	3.25	3.25	3.60	3.60
Partially Processed Oil	4.60	4.40	4.40	4.75	5.60	5.60	5.60	4.60	4.80	4.80	5.15	5.15

(1) Reduction of \$.70 and \$1.00 per barrel applicable in respect of volumes of crude oil and equivalent exported in January and July which entered exporting pipeline systems on or after 1 January 1977 and 1 July 1977 respectively.

APPENDIX O-VI

EXPORTS OF LICENCED PETROLEUM PRODUCTS — 1977 (BARRELS)

Month	Partially Processed Oil	Motor Gasoline	Heavy Fuel Oil	Middle Distillate	Total
January	334,814	14	692,140	39,501	1,066,469
February	492,230	375,459	659,295	1,659,726	3,186,710
March	494,524	851,384	501,640	376,370	2,223,918
April	653,394	227,413	403,500	24,794	1,309,101
May	334,724	938	1,305,851	30,093	1,671,606
June	265,546	215,949	2,161,963	32,489	2,675,947
July	328,541	454,915	2,437,331	32,582	3,253,369
August	246,081	208,808	1,950,302	509,249	2,914,440
September	218,040	777,528	2,241,368	171,018	3,407,954
October	371,493	34,140	1,435,687	39,387	1,880,707
November	235,567	73,813	1,231,504	30,106	1,570,990
December	255,048	16	1,517,173	9,873	1,782,110
TOTAL	4,230,002	3,220,377	16,537,754	2,955,188	26,943,321

APPENDIX O-VII

EXCHANGES OF CRUDE OIL AND EQUIVALENT WITH THE UNITED STATES — 1977

Licence Holder	Exchange Partner	Quantity in Barrels		
		Licensed	Exported	Imported
BP Canada Ltd.	Koch Refining Co.	848,000	848,820	848,820
BP Canada Ltd.	Mobil Oil Co.	1,471,600	1,389,233	1,407,931
BP Canada Ltd.	Murphy Oil Corp.	1,456,900	1,403,045	1,399,714
BP Canada Ltd.	Phillips Petroleum Co.	428,000	427,985	450,617
Gulf Oil Canada Ltd.	Amoco Oil Co.	570,500	339,767	336,896
Gulf Oil Canada Ltd.	Ashland Oil & Ref. Co.	1,095,000	1,089,675	1,089,675
Gulf Oil Canada Ltd.	Continental Oil Co.	1,011,000	1,015,801	1,016,720
Gulf Oil Canada Ltd.	Murphy Oil Corp.	1,095,000	1,085,588	1,086,097
Gulf Oil Canada Ltd.	Total Leonard Ref. Inc.	100,000	98,819	98,950
Hudson's Bay Oil & Gas Co.	Continental Oil Co.	177,000	183,228	183,228
Shell Canada Ltd.	Amoco Oil Co.	2,198,000	1,635,467	1,650,500
Shell Canada Ltd.	Farmers Union Central Exchange, Inc.	796,000	703,000	703,000
Shell Canada Ltd.	Shell Oil Co.	8,165,000	8,226,067	8,225,140
Sun Oil Co. Ltd.	Sun Oil Co.	1,714,500	1,650,239	1,653,963
TOTAL		21,126,500	20,096,734	20,151,251

APPENDIX E-I

CERTIFICATES OF PUBLIC CONVENIENCE & NECESSITY FOR INTERNATIONAL POWER LINES PURSUANT TO SECTION 44 ISSUED DURING 1977

Applicant	Facilities	Estimated Cost	Application Heard	Issued	Certificate No.
1. The Manitoba Hydro-Electric Board	One international power line to be designated the Dorsey-Chisago line and to extend approximately 130 miles from Dorsey Substation to a point on the international boundary near Sprague in the Province of Manitoba. This single-circuit line would be built for 500 kV three-phase, 60 hertz operation.	\$56,664,000	10-13 May 1977	1 Sept. 1977	EC-III-16
2. Quebec Hydro-Electric Commission	One international power line to be designated the Stanstead-Vermont line and to extend approximately 1.24 miles from Stanstead Substation to a point located 195 feet west of boundary stone No. 555A on the international boundary in the Village of Rock Island, Quebec. This single-circuit line would be built for 120 kV three-phase, 60 hertz operation.	\$ 195,000	4 Oct. 1977	16 Dec. 1977	EC-III-17

APPENDIX E-II

ORDERS RELATING TO INTERNATIONAL POWER LINES ISSUED DURING 1977

Type of Order	Applicant	Facilities	Issued	Order No.
Amending Orders to Certificates of Public Convenience and Necessity Pursuant to Subsection 17(3)	1. Cedars Rapids Transmission Company Limited	Amending order to Certificate EC-11 to provide a change in the name of the circuit from "HM3" to "L34P" and a change in voltage from 120 kV to 230 kV.	24 Feb. 1977	AO-1-EC-1
	2. Ontario Hydro	Amending order to Certificate EC-18 to provide a change in the name of the circuit from "HM3" to "L34P" and a change in voltage from 120 kV to 230 kV.	24 Feb. 1977	AO-1-EC-18
	3. Cedars Rapids Transmission Company Limited	Order authorizing the assignment and transfer by Cedars Rapids Transmission Company Limited of Certificate of Public Convenience and Necessity No. EC-11 to Ontario Hydro.	24 Feb. 1977	MO-3-77
	4. Southern Canada Power Company Limited	Amending order to Certificate EC-8 approving the changes in the conductors and in the operating voltage from 4.16 kV to 25 kV.	30 June 1977	AO-1-EC-8
	5. Southern Canada Power Company Limited	Amending order to Certificate EC-42 approving the changes in the conductors and in the operating voltage from 4.16 kV to 25 kV.	30 June 1977	AO-1-EC-42
	6. Union Twist Drill Company	Order authorizing the assignment and transfer by Union Twist Drill Company of Certificate of Public Convenience and Necessity No. EC-43 to Litton Business Systems of Canada Limited.	22 Dec. 1977	AO-1-EC-43
Exemption Order Pursuant to Section 40, 41 and 43	1. West Kootenay Power and Light Company, Limited	One International power line which extends from the first junction of the power line nearest to the international boundary line to a point on the boundary line within the boundary of District Lot 9281, all in Kootenay District, in the Province of British Columbia. This single phase line operates at 7,200 volts.	2 June 1977	XE-1-77

APPENDIX E-II (Cont'd)

ORDERS RELATING TO INTERNATIONAL POWER LINES ISSUED DURING 1977

Type of Order	Applicant	Facilities	Issued	Order No.
Leaves to Abandon and Revocation Orders to Certificates of Public Convenience to Subsection 43(3) and 47(3)	1. British Columbia Hydro and Power Authority	Order granting the leave to abandon the operation of the international power line for which Certificate No. EC-52 was issued.	1 April 1977	MO-7-77
	2. British Columbia Hydro and Power Authority	Order granting the leave to abandon the operation of the international power line for which Certificate No. EC-53 was issued	1 April 1977	MO-8-77
	3. British Columbia Hydro and Power Authority	Order revoking the Certificate No. EC-52	1 April 1977	RO-1-EC-52
	4. British Columbia Hydro and Power Authority	Order revoking the Certificate No. EC-53	1 April 1977	RO-1-EC-53
	5. Southern Canada Power Company Limited	Order granting the leave to abandon the operation of the international power line for which Certificate No. EC-9 was issued.	30 June 1977	MO-18-77
	6. Southern Canada Power Company	Order revoking the Certificate No. EC-9	30 June 1977	RO-1-EC-9
Orders under the International Power Line Regulations	1. The Manitoba Hydro Electric Board	Order approving the changes in the terminal facilities and metering equipment for the international power line authorized by Certificate of Public Convenience and Necessity No. EC-III-9	16 June 1977	MO-16-77
	2. Southern Canada Power Company Limited	Order approving the changes in the conductors and operating voltage of the international power line authorized by Certificate No. EC-7	30 June 1977	MO-19-77
	3. Litton Business Systems of Canada Limited	Order approving a change to reduce the operating voltage of the international power line authorized by Certificate No. EC-43	22 Dec. 1977	AO-2-EC-43

APPENDIX E-III

LICENCES TO EXPORT ELECTRIC POWER AND ENERGY PURSUANT TO SECTION 82 ISSUED DURING 1977

Applicant	Class	Kilowatts	Annual Gigawatt- hours	Term	Application Heard	Issued	Licence No.
1. The Manitoba Hydro-Electric Board	Interruptible		19,500	01/05/80 to 31/10/92	10-13 May 1977	27/07/77	EL-97
2. The Manitoba Hydro-Electric Board	Firm	200,000	876	01/05/80 to 31/10/92	10-13 May 1977	27/07/77	EL-98
3. The Manitoba Hydro-Electric Board	Firm	300,000	262.8	01/05/80 to 31/10/92	10-13 May 1977	27/07/77	EL-99
4. The Manitoba Hydro-Electric Board	Carrier Transfer		800	01/05/80 to 31/10/92	10-13 May 1977	27/07/77	EL-100
5. The Manitoba Hydro-Electric Board	Firm		2,500	01/05/80 to 31/10/92	10-13 May 1977	27/07/77	EL-101
6. The Manitoba Hydro-Electric Board	Firm	800,000	5,000	01/05/80 to 31/10/92	10-13 May 1977	27/07/77	EL-102
7. The Manitoba Hydro-Electric Board	Interruptible		12,000	01/05/80 to 31/10/92	10-13 May 1977	27/07/77	EL-103
8. Cominco Ltd.	Carrier Transfer		50	01/01/78 to 31/12/82	7 July 1977	01/09/77	EL-104
9. Cominco Ltd.	Interruptible		1,400	01/01/78 to 31/12/82	7 July 1977	01/09/77	EL-105
10. Quebec Hydro-Electric Commission	Firm	2,758 3,179 3,600	13.3(1978) 15.3(1979) 17.4(1980)	01/01/78 to 31/12/80	4 Oct. 1977	17/11/77	EL-106
11. Quebec Hydro-Electric Commission	Firm	22,000 25,000 30,000	144.5(1978) 164.3(1979) 197.6(1980)	01/01/78 to 31/12/80	4 Oct. 1977	17/11/77	EL-107

APPENDIX E-IV

ORDERS RELATING TO EXPORT OF ELECTRIC POWER & ENERGY ISSUED DURING 1977

NEW ORDERS ISSUED PURSUANT TO SECTION 6A OF THE REGULATIONS UNDER PART VI OF THE ACT*

Applicant	Class	Kilowatts	Annual Kilowatthours (Thousands)	Term From Date of Issue (Months)	Issued	Order No.
1. The Manitoba Hydro-Electric Board	Firm	12	15	36	21/04/77	ELO-130
2. Quebec Hydro-Electric Commission	Firm	1,500	5,930	36	17/11/77	ELO-131

REVOKING ORDERS ISSUED PURSUANT TO SUBSECTION 84(3)

Applicant	Description	Issued	Order No.
1. The Manitoba Hydro-Electric Board	Order revoking Licence EL-90 dated 2 March 1976, to be effective 30 April 1980.	24/11/77	RO-1-EL-90
2. The Manitoba Hydro-Electric Board	Order revoking Licence EL-91 dated 2 March 1976, to be effective 30 April 1980.	24/11/77	RO-1-EL-91
3. The Manitoba Hydro-Electric Board	Order revoking Licence EL-92 dated 2 March 1976, to be effective 30 April 1980.	24/11/77	RO-1-EL-92
4. The Manitoba Hydro-Electric Board	Order revoking Licence EL-93 dated 2 March 1976, to be effective 30 April 1980.	24/11/77	RO-1-EL-93

AMENDING ORDERS ISSUED RELATIVE TO ELECTRIC POWER

Applicant	Associated Licence	Issued	Order No.
1. Ontario Hydro	EL-95	24/02/77	AO-1-EL-95
2. Quebec Hydro-Electric Commission	EL-78	26/05/77	AO-1-EL-78
3. Southern Canada Power Company Limited	EL-30	11/08/77	AO-9-EL-30
4. Southern Canada Power Company Limited	EL-31	11/08/77	AO-9-EL-31
5. The New Brunswick Electric Power Commission	EL-66	01/09/77	AO-3-EL-66
6. The New Brunswick Electric Power Commission	EL-68	01/09/77	AO-2-EL-68
7. The New Brunswick Electric Power Commission	EL-70	01/09/77	AO-2-EL-70
8. The New Brunswick Electric Power Commission	EL-71	01/09/77	AO-2-EL-71
9. St. Lawrence Power Company	EL-77	15/09/77	AO-1-EL-77
10. The Manitoba Hydro-Electric Board	EL-98	29/09/77	AO-1-EL-98
11. Ontario Hydro	ELO-122	20/10/77	AO-1-ELO-122
12. Southern Canada Power Company Limited	EL-30	17/11/77	AO-10-EL-30
13. The New Brunswick Electric Power Commission	ELO-127	15/12/77	AO-1-ELO-127

*Under Section 6A the Board may by order authorize the exportation of not more than 4,000 kilowatts of electric power and not more than 20,000,000 kilowatthours per year of electrical energy for a term not exceeding three years upon such terms and conditions as the Board may prescribe.

APPENDIX E-V (Cont'd)

EXPORTS OF ELECTRIC ENERGY — CALENDAR YEAR 1977 THOUSANDS OF KILOWATTHOURS

Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Reported Dollar Value of Export	
		Firm	Interruptible	Firm	Interruptible	Exchange ⁽¹⁾	Firm	Interruptible
1 Maine and New Brunswick Electrical Power Company, Limited	EL-22 EL-23	250,000	25,000	138,644	—		\$ 1,059,209	\$ —
2 Fraser Companies, Limited	EL-79 EL-80	400,000	30,000	281,049	—		5,844,656	—
3 The New Brunswick Electric Power Commission	EL-64 EL-65 AO-3-EL-66 EL-68 EL-69 EL-70 EL-71 ELO-125 to ELO-127	3,504,000 500,000 102,492 100,000 290	876,000 150,000 163,812	2,618,359 — 235	408,259 76,565 4,379	-359,528 1,094 359,528 467 241 12,768	67,981,292 — 10,037	7,075,505 1,887,888 40,908
Sub-Total New Brunswick				3,038,287	489,203	14,570	74,895,194	9,004,301
4 Cedars Rapids Transmission Company Limited	ELO-129		20,000		—			—
5 Quebec Hydro-Electric Commission	AO-1-EL-78 ELO-114 to ELO-121	582	1,530,000	388	476,067	18,652	5,769	6,786,533
6 Southern Canada Power Company Limited	AO-9-EL-30 AO-9-EL-31	13,000	74,250	11,247	71,720		266,583	1,208,260
Sub-Total Quebec				11,635	547,787	18,652	272,352	7,994,793
7 Ontario Hydro	EL-32 EL-94 EL-95 ELO-122	15,000 8,000,000 15,000,000 30		1,009		669,141 34,511	2,019	205,784,900
8 Canadian Niagara Power Company Limited	EL-83 EL-84	260,000	200,000	136,038	9,417	10,036	1,809,685	107,993
9 The Ontario-Minnesota Pulp and Paper Company	EL-62 EL-63	280,300	87,600	267,411	—		4,960,495	—
10 The Detroit and Windsor Subway Company	ELO-128	1,000		902			—	
11 The Canadian Transit Company	ELO-123	25		24			—	
12 St. Lawrence Power Company	AO-1-EL-77		250,000		112,786	7,767		1,301,602
Sub-Total Ontario				405,384	8,521,237	721,455	6,772,199	207,194,495
13 Manitoba Hydro	EL-90 EL-91 EL-92 EL-93 ELO-130	822,000 1,200,000 300,000 15	3,000,000	260,864	311,690	-36,841 46,963 —	8,069,460 387	7,021,963
Sub-Total Manitoba				260,877	311,690	10,122	8,069,847	7,021,963
14 British Columbia Hydro and Power Authority	EL-85 EL-86 EL-87 EL-88 EL-89 ELO-124	25,000 1,000,000 800,000 2,000,000 600	3,600,000	10,454 — 160		312,317 333,513	197,356 — 12,728	66,950,050
15 Cominco Ltd.	EL-20 EL-81 EL-82	600,000	500,000 1,500,000	—	3,607,919 1,304,427	1,750 35,507	—	30,884,936
16 West Kootenay Power and Light Company	ELO-113	50		30			701	
Sub-Total British Columbia				10,644	4,912,346	683,087	210,785	97,834,986
Total Canada				3,726,827	14,782,263	1,447,886	90,220,377	329,050,538

(1) Exchange is no value energy. It includes inadvertent and circulating flows, equichange, storage, adjustment transfers and wheeling or carrier transfer.

APPENDIX E-VI

TOTAL CANADIAN ELECTRIC ENERGY SUPPLY AND TRADE WITH THE UNITED STATES — CALENDAR YEAR 1977

Type	Millions of Kilowatthours
Electric Energy Generation for all Canada	316,144 (preliminary)
Electric Energy Importation from U.S.A.	2,690 "
Total Canadian Electric Energy Supply	318,834 "
Electric Energy Export (Gross) to U.S.A.	3,726 (firm) — 1.2% Canadian Supply 14,782 (interruptible) — 4.6% of Canadian Supply 1,448 (exchange) — 0.5% of Canadian Supply

APPENDIX S-I

PIPELINE LEAKS, BREAKS AND MALFUNCTIONS 1977

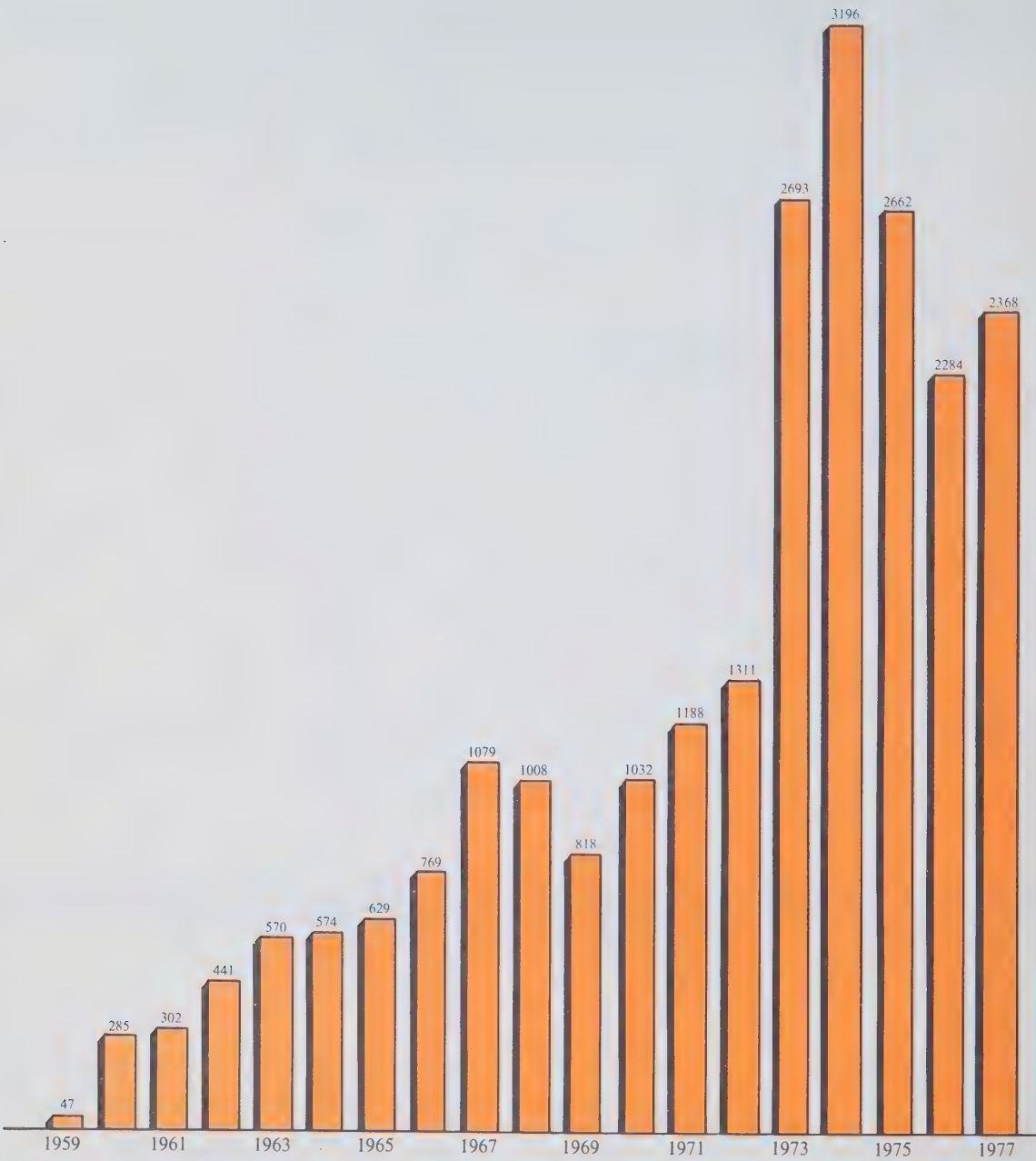
Origin of Reported Incidents	Number of Incidents
Internal and external corrosion of pipe and equipment	5
Defective Mill Welds	3
Defective Field Welds	9
Pipe Material Defects	1
Defective Equipment and Piping	17
Damage during Construction by others	3
Miscellaneous	8
TOTAL	46

One incident resulted in pipeline rupture.

APPENDIX S-II

TOTAL NUMBER OF BOARD CERTIFICATES, LICENCES, PERMITS, ORDERS AND AUTHORIZATIONS BETWEEN 1959 AND 1977

The National Energy Board Act was proclaimed on November 2, 1959



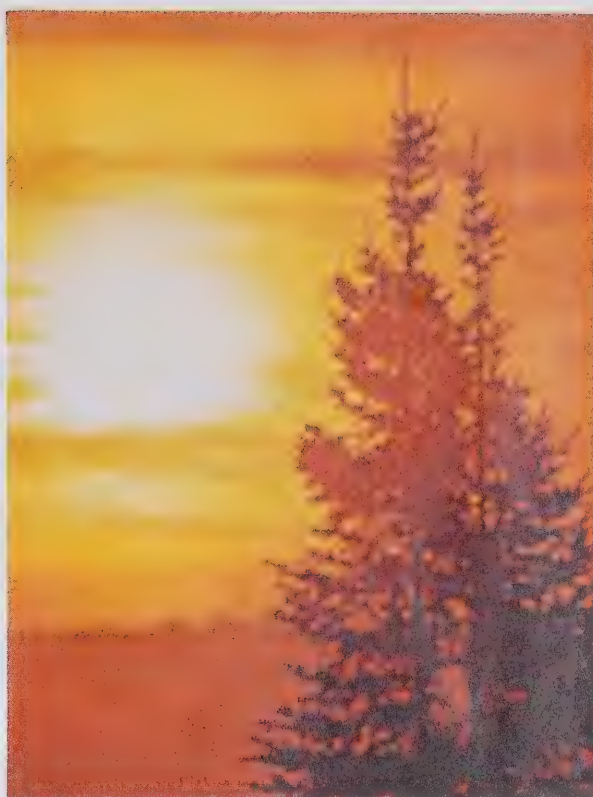
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1978
ANNUAL REPORT

NATIONAL ENERGY BOARD





1978 ANNUAL REPORT NATIONAL ENERGY BOARD

Ce rapport annuel est publié séparément dans les deux langues officielles. Des copies en langue française pourront être obtenues du bureau de la division du secrétariat de l'Office national de l'énergie.



30 March 1979

*The Honourable Alastair Gillespie, P.C.,
Minister of Energy, Mines and Resources,
Ottawa, Ontario.*

Dear Sir:

In accordance with the provisions of Section 91 of the National Energy Board Act, the Revised Statutes of Canada, 1970, chapter N-6, I am pleased to submit the Annual Report of the National Energy Board for the year ended 31 December 1978.

Yours sincerely,

J.G. Stabback,
Chairman.

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The Functions and Responsibilities of the National Energy Board

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal roles: to regulate specific areas of the oil, gas and electrical utility industries in the public interest, and to advise the Government on the development and use of energy resources.

The Board on its own initiative may hold inquiries into a particular aspect of the energy situation and prepare reports for the information of the Government, of Parliament and of the general public.

The Board also carries out studies and prepares reports at the request of the Minister.

The Act requires the Board to regulate various aspects of several types of energy industry to ensure that the interests of the public are protected. The regulatory role of the Board encompasses the following fields:

Certificates of Public Convenience and Necessity

The Board grants certificates to construct or operate interprovincial and international oil, gas and petroleum products pipelines, and international electric power lines. Before permission is granted for construction, through a certificate of public convenience and necessity, the Board considers the application at a public hearing. The Board may, however, issue orders for relatively minor additions or modifications to pipeline systems without calling a public hearing. These would include sections, branches and extensions of pipeline not more than 25 miles in length, and ancillary installations such as tanks, pumps, compressors, meter stations, and communications systems. The Board may also by order authorize international power lines of transfer capacity not exceeding 5,000 kilowatts (kW).

Pipeline Utility Crossings

For reasons of safety, the protection of the environment and of other utility services, no pipeline may cross or be crossed by another utility without authorization. Where a pipeline is to cross a navigable water or a railway, leave must be obtained from the Minister of Transport or the Canadian Transport Commission respectively. Crossings of the facilities of other utilities may only be made with the authorization of the Board. Authorization is made by Board order after consideration of all the relevant information.

Safety Regulations

Pipeline safety is an important aspect of the Board's responsibilities, and high standards are reflected in its regulations and orders. On-site inspections by Board staff, particularly during periods of construction, are carried out.

Licences and Orders

The National Energy Board Act requires that, in considering applications for export licences, the Board take into consideration all matters that appear to it to be relevant. It must, among other things, satisfy itself that the quantities of energy involved do not exceed the surplus remaining after allowance has been made for reasonably foreseeable Canadian requirements for that particular form of energy. The Board must also be satisfied that the prices charged for exports are just and reasonable in relation to the public interest.

Regulation of Pipeline Tolls, Tariffs and Accounting Practices

The regulation of rates, tolls and tariffs of pipeline companies under federal jurisdiction is carried out by the Board. In the establishment of fair and reasonable rates or charges for the transportation of oil and gas in a pipeline, the Board seeks to ensure that there is no unjust discrimination against any person or locality. The rates, tolls, or tariffs allowed reflect, among other things, the capital and operating costs of the pipeline company and the necessity for it to earn an adequate return on its investment so as to be able to attract capital as needed to maintain and extend service.

To enable the Board to reach reasonable decisions, it is essential that financial information provided by all companies be complete and in a form permitting full evaluation and comparison. This is accomplished by requiring oil and gas pipeline companies under the Board's jurisdiction to use uniform accounting classifications and practices.

Responsibilities under the Petroleum Administration Act

The Board is required to administer certain provisions of the Petroleum Administration Act. This Act empowers the federal government to impose a charge on the export of crude oil and certain petroleum products; to provide compensation for certain petroleum costs; and to regulate the price of Canadian crude oil and natural gas in interprovincial and export trade.

Responsibilities under the Northern Pipeline Act.

The Northern Pipeline Act, passed on 12 April 1978, provided the authority for the construction of the natural gas pipeline in Canada along the Alaska Highway, as well as for the creation of a Northern Pipeline Agency to oversee the construction of the pipeline. Certain terms and conditions in the legislation require the company to seek approval of the Board and the Minister responsible for the Northern Pipeline Act.

The Board's responsibilities relate mainly to the incentive rate of return schemes, financing and tariffs and the granting of "leave to open" orders. In addition, the Northern Pipeline Agency seeks assistance from the Board on engineering design and on environmental and socio-economic matters in carrying out its mandate. Under an agreement between the federal government and Foothills Pipe Lines (Yukon) Ltd. (the Dempster Link Agreement), the Board is required to oversee the conduct of feasibility studies leading to an application to construct a lateral line along the Dempster Highway from the Mackenzie Delta to Whitehorse. This application is to be filed by 1 July 1979.

Implementation of Board Decisions

When the Board is prepared to grant a certificate for a pipeline or a power line or to issue a licence for the export of gas or electricity, the import of gas or the export of oil for a period exceeding one year, it so reports to the Governor in Council through the Minister of Energy, Mines and Resources. If the issuance of a certificate is approved by the Governor in Council, the certificate is then issued by the Board. In the case of an export application, a licence issued by the Board goes into effect as soon as it is approved by the Governor in Council. When the Board refuses an application, the decision is not subject to referral to the Governor in Council. The Board's reports on all these matters are issued as public documents.

Because of the special nature of the trade in crude oil and petroleum products — specifically the use of short-term contracts and the need to make decisions on a daily basis — oil export controls (except for licences for periods in excess of one year) are implemented directly by the Board without reference to the Governor in Council.

Applications for orders authorizing the export of natural gas, ethane, propane, butanes and ethylene for periods of up to one year, are also dealt with by the Board

without reference to the Governor in Council. Decisions regarding rates, tolls, and tariffs are implemented by the Board without reference to the Governor in Council.

Appeals of Board Decisions

The National Energy Board is a Court of Record. With regard to attendance, the swearing and examination of witnesses, the production and inspection of documents, and the enforcement of its orders, it has all the powers vested in a superior court of record.

Under section 17(1) of the National Energy Board Act, the Board may review, rescind or change any order or decision made by it, or may re-hear any application before deciding it. Under section 17(2) of the Act, the Board may change a certificate or licence issued by it but no such change is effective until approved by the Governor in Council. Parties may apply to the Board, pursuant to these sections of the Act, requesting the Board to review an order, decision, licence or certificate.

A decision or order of the Board may be appealed to the Federal Court of Appeal providing the appeal is based upon a point of law or of jurisdiction. Leave to appeal must be obtained upon application made within one month after the making of the Board's decision or order, or within such further times as that Court, under special circumstances, allows. Judgments of the Federal Court of Appeal may, with leave, be appealed to the Supreme Court of Canada. The Federal Court of Appeal also has jurisdiction to review and set aside a decision or order of the National Energy Board upon certain stipulated grounds.

The Trial Division of the Federal Court of Canada has exclusive jurisdiction to issue an injunction, writ of certiorari, writ of prohibition, writ of mandamus, or writ of quo warranto, or to grant declaratory relief against any federal board, commission or other tribunal.

Review of the Year

Supply and Demand

Domestic production of crude oil and equivalent hydrocarbons averaged 1,431 Mb/d (thousand barrels per day) in 1978, a decrease of little more than one percent from the 1977 level. The surplus of production available for export, as determined by the Board after due allowance for foreseeable Canadian requirements, continued to decline and averaged approximately 173 Mb/d for the year, as against the 1977 average of 272 Mb/d. There was a decrease in crude oil productive capacity of 59 Mb/d which was partially offset by an increase of only 8 Mb/d in synthetic oil production, and the surplus of production available for export was further reduced by a higher rate of movement of oil from Sarnia to Montreal in displacement of crude oil imports.

A total of 63 million barrels of crude oil and equivalent was licensed for export in 1978, together with 50 million barrels of refined petroleum products. Actual shipments were slightly less than the licensed volumes.

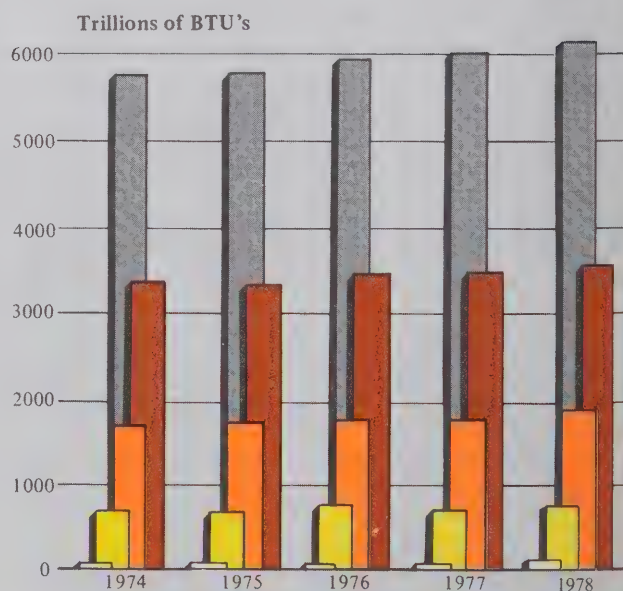
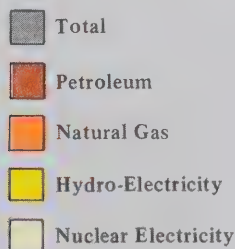
Production of marketable natural gas decreased by 5.1 percent from 2,594 billion cubic feet (Bcf) in 1977 to an estimated 2,463 Bcf in 1978. Net sales to ultimate Canadian consumers amounted to 1,491 Bcf and the balance of production, 881 Bcf or 35.8 percent, was exported to the United States.

Canadian Consumption of Selected Energies

Figure 1

	1974	1975	1976	1977(p)	1978(e)
Petroleum	3,313.3	3,298.6	3,417.4	3,430.5	3,585.6
Natural Gas	1,666.0	1,714.4	1,759.3	1,818.1	1,842.4
Hydro-Electricity	680.9	670.5	700.1	698.1	745.8
Nuclear Electricity	47.3	40.5	56.1	84.3	103.6
Total	5,707.5	5,724.0	5,932.9	6,031.0	6,277.4

(p) preliminary (e) estimated



Analysis of Canadian consumption of natural gas by province for 1978 indicated a moderate increase over the 1977 levels. The principal moderating factors were price increases and conservation, but the moderate growth of the Canadian economy and colder than normal weather, especially in Ontario, stimulated domestic consumption to an overall net increase of some 4 percent.

Exports of natural gas to the United States declined more than 11 percent from 1977 levels. This decline is attributable to sharply reduced levels of demand for

Canadian gas, especially in the Pacific Northwest and California markets, and to the absence of short-term emergency exports.

Canada's total net installed electrical generating capacity at the end of 1978 was approximately 74,500 megawatts (MW), of which hydroelectric plants accounted for approximately 57 percent, conventional thermal stations 35 percent and nuclear power 8 percent. Total Canadian consumption of electric energy in 1978 is estimated to have been 316,206 gigawatt hours (GW.h), up about 5.7 percent from 1977. Net exports of electric energy in 1978 were 19,510 GW.h, an increase of 13 percent over the previous year.

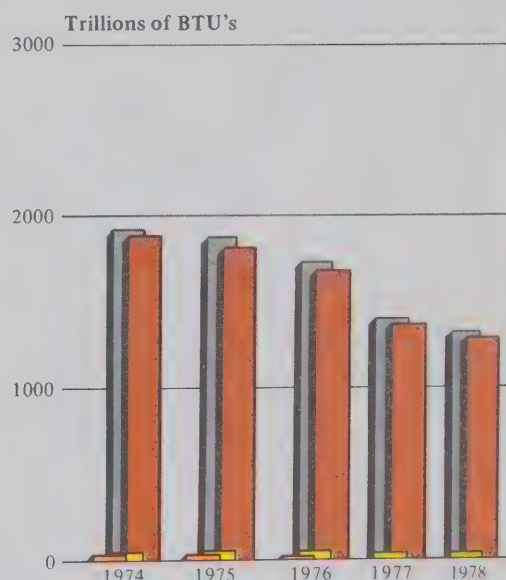
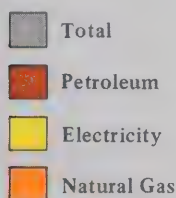
Imports of Petroleum, Natural Gas and Electricity

Figure 2(a)

	1974	1975	1976	1977	1978 ^(e)
Petroleum	1,882.5	1,825.1	1,685.9	1,370.1	1,307.8
Natural Gas	13.7	10.6	4.2	—*	—*
Electricity	24.4	39.7	35.9	26.9	20.9
Total	1,920.6	1,875.4	1,726.0	1,397.0	1,328.6

(e) estimated

* less than 0.1 Tbtu

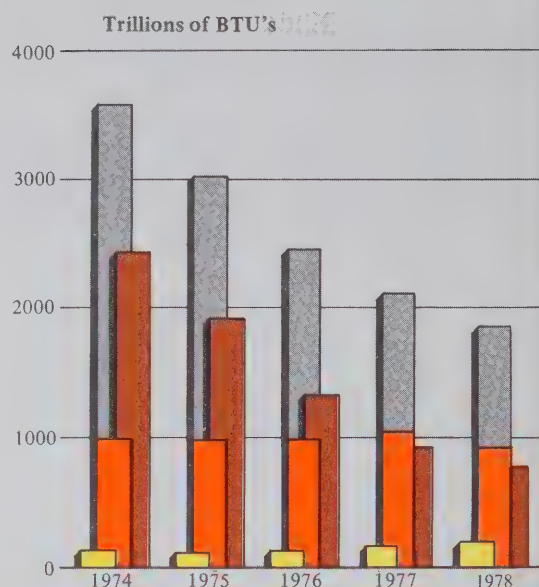
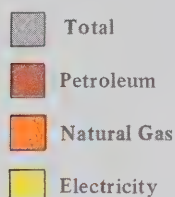


Exports of Petroleum, Natural Gas and Electricity

Figure 2(b)

	1974	1975	1976	1977	1978 ^(e)
Petroleum	2,446.5	1,923.0	1,346.2	949.5	762.0
Natural Gas	992.6	980.0	987.0	1,035.3	911.9
Electricity	454.0	113.8	128.0	199.6	216.2
Total	3,593.1	3,016.8	2,461.2	2,184.4	1,889.9

(e) estimated



Oil and Gas Reserves

The Board's estimate of remaining established reserves⁽¹⁾ of crude oil as of 31 December 1977 is 5,783 million stock tank barrels (MMstb), 218 MMstb lower than the 31 December 1976 estimate.

Initial established reserves at 31 December 1977 were estimated at 14,126 MMstb, an increase of 243 MMstb from the 31 December 1976 estimate of 13,883 MMstb. Production in 1977 was 461 MMstb.

Future additions to established reserves from new discoveries for light crude oil in Western Canada were estimated at 1.3 billion barrels including 0.5 billion barrels for West Pembina. Furthermore, the Board expects that recoverable reserves of this grade of oil will be further increased by nearly one billion barrels as a result of improved recovery techniques. With respect to heavy crude oil, the Board estimates that an additional 400 million barrels of established reserves will arise from

new discoveries, 420 million barrels from development of known volumes in-place in the Lloydminster area and 1,750 million barrels from improved recovery techniques.

Estimated Established Reserves of Conventional Crude Oil at 31 December 1977

	(MMstb)	
	Initial	Remaining
British Columbia	437	146
Alberta	11,191	4,888
Saskatchewan	2,213	659
Manitoba	164	45
Northwest Territories	60	38
Ontario	61	6
Canada Total	14,126	5,782

Note: Propane, butanes and pentanes plus not included

The Board's estimate of remaining established reserves of marketable natural gas in the conventional producing areas as of 31 December 1977 is 64.5 trillion cubic feet (Tcf) at 1,000 British thermal units per cubic foot (Btu/cf), 3.1 Tcf higher than its 31 December 1976 estimate. This growth in reserves, a continuation of the trend started in 1976, is the direct result of the substantial in-

(1) The Board has adopted the reserves terminology and definitions recommended by the Joint Task Force on Uniform Reserves Terminology in its report dated November 1978. This Task Force was formed under the auspices of the Inter-Provincial Advisory Committee on Energy (IPACE) to develop uniform terminology and definitions for use in estimating and publishing hydrocarbon reserves in Canada.

crease in exploratory and development drilling brought about by higher natural gas prices.

Additions to initial established marketable reserves during 1977 were 5.8 Tcf, of which 5.3 were in Alberta and 0.5 Tcf in British Columbia. There was no significant change in Saskatchewan. The initial marketable reserves of the Yukon and Northwest Territories, excluding the Mackenzie Delta and Arctic Islands, were decreased by 0.2 Tcf in recognition of continued deterioration in the production performance of the Pointed Mountain field.

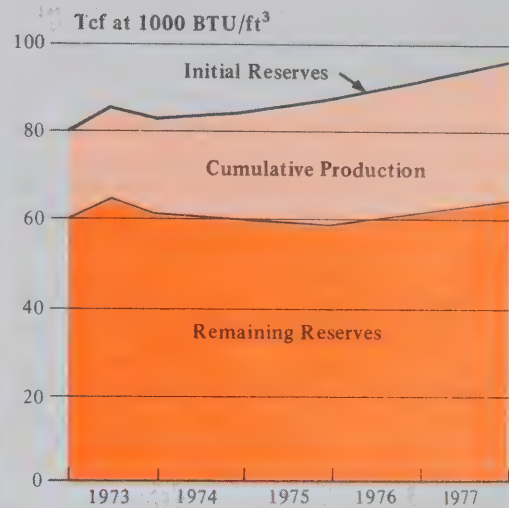
Estimate of Established Reserves of Marketable Natural Gas at 31 December 1977

	(Tcf at 1,000 Btu/cf)	
	Initial	Remaining
British Columbia	11.1	6.4
Alberta	82.2	56.5
Saskatchewan	1.9	1.0
Southern Yukon & Northwest Territories	0.4	0.3
Ontario & other eastern Canada	1.1	0.3
Conventional Producing Area		
Total	96.7	64.5
Mackenzie Delta	5.3*	5.3*
Arctic Islands	7.3*	7.3*
Canada Total	109.3	77.1

*heating value assumed to be 1,000 Btu/cf

Figure 3

Established Reserves of Marketable Natural Gas from Conventional Producing Areas



Public Hearings

During 1978 the Board conducted all or part of nine public hearings in locations from Halifax, Nova Scotia to Vancouver, British Columbia, during the course of which the Board sat for a total of 110 days.

The most significant of these hearings in terms of general public interest were:

- At the request of the Minister of Energy, Mines and Resources, the Board held a public inquiry during 1978 to investigate a range of possible oil supply situations that might occur over the next 10 to 15 years. In response to the Board's Hearing Order, seventy-nine written submissions addressing the topic were received from industry, public interest groups, and private individuals. Sixty-six submitters presented spoken evidence at the Board's public inquiry, which was held during May and June in Calgary, Vancouver, Halifax, and Ottawa. The findings were published in a report entitled "Canadian Oil Supply and Requirements", September 1978.

The main conclusions reached by the Board in its report were:

- There is no Canadian need to expand or augment existing facilities for the importation of overseas oil.
- Deliveries of Canadian oil to Montreal could be sustained at the 315,000 barrels a day level until late 1983; thereafter, deliveries would have to be reduced gradually reaching a level of about 100,000 barrels a day by 1995.
- Deliveries of Canadian crude oil to Montreal should not be at such a high level as to jeopardize the long-term viability of the Portland-Montreal pipeline system which is used to transport overseas oil to Montreal.
- Should the government determine it to be in the national interest, licensing of exports of light crude oil can be maintained at the 1978 level of 55,000 barrels a day for three years.
- Exports of heavy crude oil should continue to be licensed on the current basis, that is, restricted to those quantities remaining after meeting the feedstock requirements of Canadian refiners.
- If there were significant displacement of oil by natural gas in Eastern Canada, the surplus refining situation already existing in that area would be exacerbated; markets for the displaced oil products might not easily be found.

- An application was received from Union Gas Limited to export SNG (synthetic natural gas) to Northern Natural Gas Company of Omaha, Nebraska, at a daily volume of 75 MMcf and a maximum volume of 50 Bcf for a five-year period ending 1 April 1983. The exports, to take place during the winter months, would be accomplished by displacement, with Union using SNG within its Ontario system, thereby releasing to Northern Natural equivalent volumes of natural gas normally transported under contract for delivery to Union from Emerson, Manitoba through the Great Lakes system. The application was approved. This decision, to be effective, requires an equivalent import approval by United States authorities.
- A hearing was held to consider two applications by Westcoast Transmission Company Limited for the construction of pipeline and gas plant facilities. These facilities were required to enable Westcoast to gather, process and bring to market natural gas produced in the Grizzly-Bullmoose-Sukunka and Silver-Dahl areas near Fort St. John in northeastern British Columbia. Both applications were approved.
- The hearing respecting tariffs and tolls charged by Interprovincial Pipe Line Limited commenced in 1976 and continued in 1977. Part II was completed in November 1977. The Board's Part II Reasons for Decision issued in December 1977 determined Interprovincial's rate base, cost of service and rate of return. In January 1978, Interprovincial applied to the Board to have certain parts of the decision rendered in Part II reviewed and re-heard. In March 1978 the Board announced that, on the basis of the original evidence, it had revised parts of the decision allowing certain changes to be made in the allowable rate base and cost of service and consequently in the net revenue requirement. In April and May 1978 the Board completed the third and final part of the hearing on Interprovincial's tolls and tariffs and in May 1978 issued its Part III Reasons for Decision, which concerned an updated cost of service and the design of tolls and tariffs.
- Phase I of a hearing respecting the tariffs and tolls to be charged by Westcoast Transmission Company Limited was completed in March of 1978. A decision on this phase, dealing with the issues of depreciation and income taxes, was issued in May of 1978. The decision was appealed and the appeals are pending. In addition, the Board was asked to review its decision. Following a public hearing, the Board concluded that it should undertake a review based on the existing record and subsequently issued its decision on the re-

view of the Phase I Decision on 7 December 1978. The decision confirmed that the "normalized" method of accounting for income taxes was appropriate for rate making in Westcoast's case, but rescinded the earlier decision to include deferred income taxes in the company's cost of service. The question of whether, and how, depreciation should be allocated between export and Canadian customers was left for decision at a later stage in the main hearing.

- An application by TransCanada PipeLines Limited for tolls and tariffs was heard in May and June. Subsequently, the Board made a new tariff order for TransCanada, effective 1 August. The Reasons for Decision, published in early August, directed TransCanada to adopt the normalized method for the allocation of income taxes. An application to have the Board review its decision was denied.
- A public inquiry was held into current and future natural gas supply and requirements in Canada. The inquiry commenced in Calgary on 11 October, continued in Vancouver, Halifax and Quebec and concluded in Ottawa on 4 December. A total of 89 interested parties participated in the inquiry. The Board will release a report on its findings early in 1979. If a surplus is found to exist, the Board will hear a number of competing export applications.

In 1978 the Board issued a total of 2,903 certificates, licences, orders and authorizations a 22 percent increase over the 2,368 issued in 1977. Those issued in 1978 included two certificates of public convenience and necessity issued in 1978; 956 licences and orders for the export or import of gas, oil, refined hydrocarbons and power; 24 orders exempting certain pipeline and power facilities from certain requirements of the Act; 248 orders approving plans, profiles and books of reference for new pipelines or portions thereof, as well as deviations and replacements of existing pipelines; 12 orders approving plans for compressor, pump and meter stations; 382 orders granting "leave to open" oil or gas pipeline facilities; 40 orders authorizing the operation of existing pipeline facilities at operating pressures higher than those previously permitted; four orders approving the sale, conveyance, purchase, lease or assignment of parts of pipeline or power facilities; 744 orders relating to the crossing of and by pipelines with regard to other utilities, highways and railways; seven amendments to the Natural Gas Price Regulations and 27 special and general orders of the Board.

Litigation

The Board has been involved in the following litigation in 1978.

The Yukon Conservation Society applied to the Federal Court of Appeal on 2 August 1977 for leave to appeal the Board's Northern Pipeline Decision under section 18 of the National Energy Board Act. The application alleged that the Board exceeded its jurisdiction and breached the rules of natural justice in approving the issue of a certificate for a pipeline route which had not been formally requested by any of the applicants to the Board, and in not giving notice to the Yukon Conservation Society and others that the Board was considering such a pipeline route. The application also alleged that the Board exceeded its jurisdiction by adjudicating upon the Northern Pipeline applications without having before it all the information required by the Schedule to the National Energy Board Rules of Practice and Procedure, and by conditioning its decision to require Foothills Pipe Lines (Yukon) Ltd. to apply to the Board by 1 July 1979 for a certificate under section 44 of the National Energy Board Act for a pipeline along the route of the Dempster Highway.

On 4 August 1977, the Council of Yukon Indians applied to the Federal Court of Appeal for leave to appeal, under section 18 of the National Energy Board Act, the Northern Pipeline Decision on grounds identical to those raised by the Yukon Conservation Society. On 12 August 1977, the Federal Court ordered that the two applications be joined together in one action. The joint application for leave to appeal was dismissed by the Federal Court of Appeal by a judgment rendered on 5 December 1978.

On 7 and 8 December 1976, the Federal Court of Appeal heard an appeal under section 18 of the National Energy Board Act and an application for judicial review under section 28 of the Federal Court Act brought by Saskatchewan Power Corporation and Many Islands Pipe Lines Limited. These proceedings relate to a decision by the Board in April 1976, in which the Board found that a contract between the two applicant companies and TransCanada PipeLines Limited dated 1 November 1969 was a contract required to be filed with the Board under subsection 51(2) of the National Energy Board Act, and that the sale of gas by TransCanada pursuant to the contract was subject to the Board's regulation of tolls and tariffs under Part IV of the Act. In the Federal Court proceedings, it was alleged that Part IV of the National Energy Board Act had no application to the contract and, alternatively, if it did, sections 50 and 51 were ultra vires the Parliament of Canada in

that they extended to matters relating exclusively to property and civil rights within a province. On 23 February 1977, the Federal Court of Appeal held that the contract was one within subsection 51(2) of the Act, and that sections 50 and 51 of the National Energy Board Act were valid legislation in relation to interprovincial pipelines, with the result that the appeal was dismissed. The section 28 application for judicial review was dismissed on the basis of section 29 of the Federal Court Act.

On 17 May 1977, the Supreme Court of Canada granted leave to appeal the decision of the Federal Court of Appeal. This appeal was heard by the Supreme Court in the spring of 1978 and was dismissed.

By an application dated 28 February 1978, Trans-Canada PipeLines Limited applied to the Board under sections 50 and 53 of the National Energy Board Act for orders fixing tolls in respect of gas sold by the Applicant in Canada and for transportation services to Saskatchewan Power Corporation, Consolidated Natural Gas Limited and Gaz Métropolitain, inc. As a result of a hearing of the said application, tolls for the Canadian sales were approved by the Board. Certain of these tolls were not acceptable to Pan-Alberta Gas Ltd. and this company sought leave to appeal in the Federal Court. Although it was successful in obtaining leave to appeal, the Company shortly thereafter abandoned this appeal for reasons of its own.

By an application dated 15 September 1977, Westcoast Transmission Company Limited ("Westcoast") applied to the Board for an order respecting tolls which Westcoast proposed to charge for gas produced in British Columbia and sold by Westcoast to its British Columbia and export customers. The Board ordered that the said application be heard in three separate phases, of which Phase I was concerned with the issues of depreciation and income taxes. The decision in Phase I was issued by the Board on 24 May 1978. Shortly thereafter, several parties made applications for appeal under section 18 of the National Energy Board Act and for review under section 28 of the Federal Court Act of this decision, as well as requesting a review by the Board pursuant to section 17 of the National Energy Board Act. The court actions were, by agreement of the parties, held in abeyance pending the result of the review decision by the Board. The review decision, which was issued on 7 December 1978, has also been the subject of appeal and review action in the Federal Court. The matters are still pending.

By an application dated 14 March 1977, Trans Mountain Pipe Line Company Ltd. ("Trans Mountain") applied to the National Energy Board for an order under section 50 of the National Energy Board Act, inter alia, "directing it to file a revised tariff pursuant to section 51 of the Act." Pursuant to subsection 14(1) of the National Energy Board Act, the Board authorized one of its members, as Presiding Member, to take evidence and hear submissions respecting the application by Trans Mountain, for the purpose of making a report to the Board. Accordingly, the Board, having received and considered the Presiding Member's report, adopted that report and issued an order which, inter alia, prescribed the tolls to be charged by Trans Mountain effective 1 February 1978. Trans Mountain obtained leave to appeal to the Federal Court pursuant to section 18 of the National Energy Board Act, objecting (a) to the procedure adopted by the Board pursuant to the provisions of subsection 14(1) and (b) in respect of certain matters under Part IV of the Act. The case will be argued in Vancouver, in February 1979.

On 15 November 1977, the Board commenced a hearing in Fort St. John, British Columbia, on two applications by Westcoast Transmission Company Limited for certificates under section 44 of the National Energy Board Act in relation to two pipelines proposed to be constructed in northeastern British Columbia. At the opening of the hearing, the Union of British Columbia Indian Chiefs requested an adjournment of the hearing, which request was denied by the Presiding Member. On 18 November 1977, the Union applied to the Federal Court under section 18 of the Federal Court Act for a writ of prohibition, with certiorari in aid, to restrain the Board from continuing with its proceedings on these applications and to quash the proceedings to date. On 7 December 1977, the Trial Division of the Federal Court dismissed the Union's application. The Court held, on the facts of the case, that adequate notice of the hearing had been given to the Union and that the refusal of an adjournment was not tainted with unfairness or denial of natural justice. On 12 December 1977, the Union appealed the Court's judgment to the Federal Court of Appeal, and it is expected that the hearing of this appeal will proceed shortly.

Also, arising out of the same circumstances, an action was launched on 17 March 1978, in the Federal Court by Mr. Angus Davis and the Union of British Columbia Indian Chiefs against the National Energy Board, claiming general, special and punitive damages for breach of a statutory duty owed to Angus Davis and the Union of British Columbia Indian Chiefs. This action awaits the disposal of certain preliminary matters before proceeding to trial.

Membership of the Board

Mr. Jack G. Stabback became Chairman of the National Energy Board on 1 January 1978.

Mr. Stabback joined the Board as Chief Engineer in 1964, was appointed as a Member in 1968, became Associate Vice-Chairman in 1974 and Vice-Chairman in 1976.

He had previously been with the Oil and Gas Conservation Board of Alberta from 1949 to 1964. In 1964, Mr. Stabback also served as Technical Advisor to the Government of South Australia in evaluating the original occurrence of gas in that state. He is a member of the Association of Professional Engineers of Ontario.

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Mr. C. Geoffrey Edge, Associate Vice-Chairman since 1975, was appointed Vice-Chairman on 13 February 1978. Mr. Edge has been a Member of the Board since January 1971.

•

Mr. William A. Scotland, who began his association with the Board in 1960 and became a Member in 1974, was appointed Associate Vice-Chairman on 13 February 1978. In July he was appointed Deputy to the Administrator of the Northern Pipeline Agency in Calgary and became the Designated Officer of the Board in that Agency.

•

Mr. Ralph F. Brooks became an Associate Vice-Chairman in May 1978. He has been with the Board since 1968 and a Member since November 1973.

•

Mr. John R. Jenkins was appointed as a Member of the Board on 15 May 1978. Mr. Jenkins joined the Staff of the Board in 1959, became Assistant Chief Engineer in 1969, Chief Engineer and Director of the Engineering Branch in 1972, and Director General, Planning in 1975. He is a native of Medicine Hat, Alberta, and a graduate of the University of Alberta with a B.Sc in Chemical Engineering.

Since Mr. Scotland's duties with the Northern Pipeline Agency detach him from Ottawa, the Board was, in effect, two members short of its authorized complement of nine at the end of 1978.

Budget and Personnel

For the fiscal year 1978-79, the Board's budget is \$11,839,405 with a person-year allocation of 367. During 1977-78 the budget was \$11,432,000 with 362 person-years.

Official Languages Act

The Board has continued its efforts to improve its capability to provide service in both official languages and to promote the use of both official languages in its internal organization.

Metric Conversion

Commencing 1 January 1979 the National Energy Board will convert its system of measurement from Imperial to SI (Système International d'Unités). Oil will be reported in cubic metres at a reference temperature of 15°C. Gas will be reported by volume in cubic metres at reference conditions of 15°C and 101.325 kilopascals (absolute), (kPa) and by heat quantities in joules on a dry basis. Electricity will continue to be measured in watts and watt hours. The Board expects that submissions involving pipelines will also be SI although certain historical information may remain in the Imperial system.

The appendices to this annual report are in Imperial units. In next year's annual report the appendices will be in SI. Conversion of the appendices will take place during 1979 and readers requiring appendices in SI prior to the issuance of next year's annual report are invited to check with the Board as to the schedule of availability of these SI appendices.

Exploration & Development Activity— Oil & Gas

In 1978, exploratory drilling activity in the western provinces continued the upswing started at the end of 1975. Approximately 3,000 wells were drilled in 1978 compared with 2,700 in 1977, 2,400 in 1976 and 1,600 in 1975.

Preliminary estimates indicate that 3,800 development wells were drilled in the western provinces, a significant increase over the 3,200 wells drilled in 1977. Saskatchewan had the most notable increase in the number of wells completed with 920 in 1978 compared with 520 in 1977.

In the frontier areas, drilling activity declined for the fifth consecutive year. Twenty-two exploratory and development wells were drilled in the Mackenzie Delta, the Beaufort Sea, the Arctic Islands and in waters off the Atlantic coast as compared with the 27 wells drilled in 1977.

There were 88 geophysical crews operating in the western provinces at year-end compared with 77 a year earlier, indicating that the high level of exploratory drilling experienced in 1978 can be expected to continue.

The following is a summary of the significant activity which took place during the year. LOCATIONS ARE IDENTIFIED ON THE ACCOMPANYING MAP.

Alberta

Drilling activity in Alberta was scattered throughout the province, with more extensive drilling in the foothills belt, and in the West Pembina-Brazeau River and Elmworth-Wapiti areas. Discoveries to date in the West Pembina-Brazeau River Nisku play (1) have confirmed that the reservoirs cover limited areas. Nevertheless, because of thick pay sections, excellent porosities and the large number of discoveries, the potential for substantial reserves additions from this area is good. To date there are 41 confirmed or rumoured oil wells and 11 gas wells along a belt some 45 miles long and 10 miles wide.

Another very active drilling locale was the Elmworth-Wapiti area (2) which encompasses a trend 80 miles long stretching northwest from the Gold Creek gas field to the British Columbia border. During the past two years some 85 wells have been drilled in the search for gas in conglomerate and sandstone reservoirs. At year-end there were drilling activities at 27 sites in the general area with an additional 27 locations licensed.

There continued to be active exploration in northeastern Alberta in search of shallow gas reservoirs in the Viking and Colony formations. Two new fields were added in the area within the past year, namely, Hangingstone and House (3). The northwestern Alberta shallow gas play also continued to be active.

British Columbia

In British Columbia activity continued in the Fort Nelson area at Ekwan, Junior, Sahtaneh and Sierra (4). The Eagle oil field (5) in the Fort St. John area has been under active development with 38 wells now completed. In addition, development drilling continued in the Grizzly-Sukunka and Bullmoose areas (6).

Saskatchewan

Some shallow gas development took place in southwestern and west central Saskatchewan, but the majority of the drilling activity was for heavy oil from the Cretaceous sands in the Lloydminster area (7). Significant discoveries have been made over the past year in an area northwest of the Tangleflags oil field and major extensions have been made to the Tangleflags field itself (8).

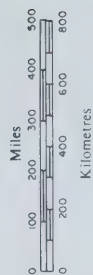
Yukon Territory

Follow-up drilling to last year's gas discovery, Columbia Gas et al Kotaneelee H-38, yielded a second success at Columbia Gas et al Kotaneelee E-37 (9). The wells are located about 10 miles northeast of the Beaver River Field. The Canada Southern et al North Beaver I-27 well, suspended in 1964, was re-entered and successfully tested. Deliveries from all three wells are expected to commence early in 1979; a dehydration plant has been installed to process the gas for connection to the nearby Westcoast pipeline system.

Mackenzie Delta/Northwest Territories Mainland

Drilling in the Mackenzie Delta/Northwest Territories Mainland in 1978 was at a level much reduced from previous years. Five wells were drilled, resulting in two gas discoveries and three dry holes. The Sun Garry G-07 gas well (10), located 3 miles north of a previous gas discovery, tested 7.2 and 14.2 MMcfd respectively from two separate zones. The second gas discovery was the Imperial Isserk E-27 well (10) which was drilled on an artificial offshore island and tested gas at rates up to 6.2 MMcfd. The three wells abandoned were the Imperial Mallik J-37, (10) the Gulf Pex et al Arrowhead M-05, (11) and the Pex Fina N. Colville L-21 (12).

Oil and Gas Developments



Beaufort Sea

Drilling in the Beaufort Sea in 1978 did not yield any confirmed hydrocarbon results. The Ukalerk 2C-50 well (13) was drilled to a total depth of 16,250 feet. Hydrocarbon indications were rumoured. The well will be tested during the 1979 drilling season. The Natsek E-56 well (14) was drilled to a depth of 8,840 feet and was suspended for further work next year. In addition, the Kopanoar M-13 well (15) drilled in 1977 was deepened this year to 14,174 feet and will also be tested during the 1979 drilling season.

Arctic Islands

In the Arctic Islands nine wells were completed in 1978, and three wells were being drilled at year-end. The Drake F-76 development well (16) was successfully connected to shore installations by pipeline and tested by techniques specifically designed for the Arctic environment. This well was reported to have an absolute open flow potential in the order of 300 MMcfd and flowed at restricted rates up to 76 MMcfd. At year-end Dome Panarctic et al Hearne F-85 (17) was drilling on southern Melville Island and Panarctic et al Noice D-41 (18) and Dome Panarctic et al Hoodoo A-05 (18) were drilling on Ellef Ringnes Island.

East Coast Offshore

Four wells were completed in 1978 on the Scotian shelf, including two new field wild cat wells and two step-out wells. The two wells drilled on new prospects were dry holes as was one of the step-out wells. The other well, Mobil-Tetco-Pex Thebaud I-94, a step-out from a 1972 gas discovery, yielded 14 MMcfd and 400 b/d of condensate on flow tests. The Thebaud well is approximately 6 miles southwest of Sable Island. A fifth well off the eastern tip of Sable Island, Mobil-Texaco-Pex Venture E-23 (19), was drilling at year-end.

Three wells were drilled this summer on the Labrador Shelf. The Total Eastcan et al Skolp E-07 well (20) was dry and was abandoned, while drilling of the Total Eastcan et al Roberval K-92 well (21) was suspended at 5,511 feet. The Chevron et al Hopedale E-33 well (22) was reported as a gas discovery producing at a rate of 18.5 MMcfd plus condensate on tests.

Operations Review

OIL AND PETROLEUM PRODUCTS

Operations in the Canadian oil industry in 1978, while exhibiting several new features and shifts in emphasis, proceeded in overall terms at about the same levels as in 1977. Refinery crude runs, averaging 1,817 Mb/d for the year, were 10 Mb/d higher than in the previous year, but substantial spare refinery capacity continued to pose difficulties for the companies operating in Eastern Canada. A new refinery of Texaco Canada Inc. at Nanticoke, Ontario, came on stream in May, with a crude distillation capacity of 100 Mb/d. There were increases in the Canadian demand for most refined products, the principal exception being heavy fuel oil demand which in total was influenced by several industrial strikes and by reduced requirements for thermal generation by electrical utilities.

There were two major adjustments to crude oil prices in 1978. The domestic price was increased by \$1.00 per barrel effective 1 January 1978 and again by \$1.00 per barrel effective 1 July 1978, bringing the average well-head price of Alberta crude to \$12.75 in the second half of the year. Crude oil export charges are shown in Appendix 0-V. The crude oil price increases in Canada,

largely offset by continuing weakness in the Canadian dollar's exchange value, led to a small reduction in export charges over the year from \$5.85 per barrel for light and medium crude exports in January to \$5.40 per barrel in December.

Crude Oil Supply, Requirements and Exports

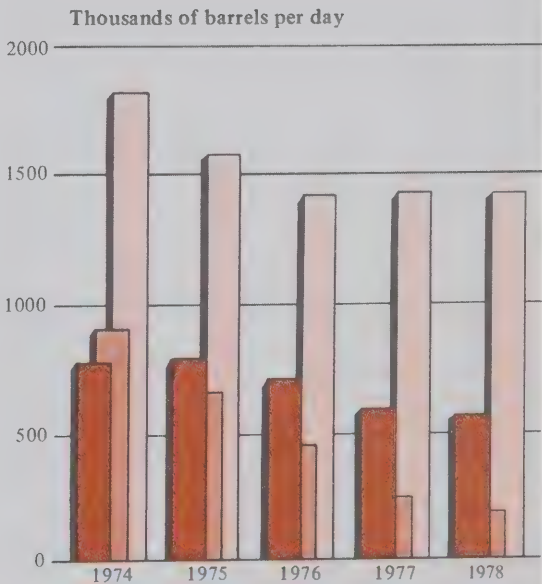
The production of crude oil and equivalent hydrocarbons in 1978 averaged 1,431 Mb/d, about 20 Mb/d less than in the preceding year. A notable feature was the start-up of the 125 Mb/d average productive capacity Syncrude plant in July 1978, processing the Athabasca oil sands. The average productive capacity including the synthetic oil plants, was 1,793 Mb/d. Imports of crude oil and equivalent were 563 Mb/d, as compared with 603 Mb/d in 1977; a significant factor was the increase in the Sarnia-Montreal pipeline throughput by an average of 30 Mb/d. The throughput had reached approximately 315 Mb/d by the end of 1978. Requirements in Canada for crude oil and equivalent were 1,819 Mb/d in 1978; of this amount 1,206 Mb/d was supplied from Canadian sources, 523 Mb/d from imports and 90 Mb/d from the United States in the form of exchange oil.

Crude Oil and Equivalent Hydrocarbons Production, Imports and Exports 1974 to 1978

Figure 5

	1974	1975	1976	1977 ^(p)	1978 ^(e)
Imports	797.6	817.6	754.3	602.7	563.0
Exports	910.9	707.3	465.1	272.0	174.1
Canadian Production	1,844.1	1,579.5	1,444.8	1,450.7	1,430.7

(e) estimated
(p) preliminary



Exports of crude oil and equivalent for 1978 averaged 174 Mb/d, 98 Mb/d less than in 1977. As in 1977, the reduction took place in the light crude oil category. Exports of heavy oil increased from an average of 54 Mb/d in 1977 to 67 Mb/d in 1978.

Exchanges of crude oil at 90 Mb/d were 35 Mb/d greater than in 1977. They were made under approved exchange arrangements to refiners in the United States, mainly located in the "Northern Tier" states.

For most of 1978, imported oil was available without restraint, and prices rose slowly. However, from early November and for the rest of the year, crude oil supplies in the international market became relatively scarce, with corresponding sharp increases in prices and freights. This was largely a reflection of the strikes and reduced output accompanying political unrest in Iran. The impact was felt in Canada, but not such as to seriously disrupt the operations of importers and refiners; nor were there any effects apparent on consumers. The average level of crude oil imports was 563 Mb/d.

Oil Pipeline Activities

The most significant items were as follows:

- Interprovincial Pipe Line Limited's 837-km (520-mile) pipeline extension from Sarnia to Montreal was completed in 1976. Because of the presence of certain anomalies created during construction, the Board initially restricted the operating pressure to 50 percent of the maximum operating pressure (MOP), as defined in the Board's Oil Pipeline Regulations. In 1977, following completion of a repair program, the Board permitted an increase in maximum operating pressures to 65 percent. After completion of further tests, the Board, in May 1978, approved an increase to 100 percent of maximum design pressures, subject to special operational review over a two-year period.
- In February 1978, Interprovincial filed a Class "C" application to convert its line No.1 between Edmonton, Alberta and the international boundary to High Vapour Pressure (H.V.P.) service, requiring compliance with Part X — "High Vapour Pressure Pipelines" — of the Oil Pipelines Regulations. Line No.1, installed in 1950, was not designed to conform to all the requirements of the Oil Pipelines Regulations (1978) as they relate to H.V.P. Pipelines. Consequently, Interprovincial applied to the Board for exemption from certain of these requirements. After examination by Board staff, approval was granted to upgrade the line — subject to certain conditions. The upgrading program is expected to be completed by late 1979.
- Both Interprovincial and Trans-Northern Pipe Line Company were granted Leave to Open orders respectively for the crude oil pipeline to, and products pipeline from, Texaco's refinery at Nanticoke, Ontario.
- During the year, Trans Mountain Pipe Line Company Ltd. continued its program of retesting its main line and 140 miles of pipe were retested in five sections. As a result of this program, permission was granted to increase maximum operating pressures of certain sections of the line.
- Construction of the Cochin pipeline from Fort Saskatchewan, Alberta to the United States border was completed, and Leave to Open granted, in 1978. Leave to Open the Windsor, Ontario pump station was also granted. The Windsor to Sarnia section of the line will be installed in 1979.
- During 1978, Dome-Amoco received Leave to Open for a 6-inch diameter condensate line in the Sarnia area. This line ties in to an existing 8-inch diameter line in the Sarnia area and supplies condensate to Petrosar Limited.

Applications

Dome NGL Pipe Line Limited

During 1978, the Board was asked to review the condition of the inactive 12-inch diameter pipeline between Sarnia and Windsor which Dome NGL Pipe Line Ltd. had proposed to recondition for use. The company subsequently withdrew its application on 12 July 1978.

Kitimat Pipe Line Ltd.

In December 1976, Kitimat Pipe Line Ltd. submitted to the Board an application for a certificate of public convenience and necessity for a pipeline system from Kitimat, British Columbia, to Edmonton, Alberta. In June 1977, Kitimat requested that the Board place its application in abeyance; in January 1978, Kitimat advised the Board that it had decided to reactivate its project and also indicated that certain revisions to its application would be submitted to the Board at a later date. At year-end 1978 no revised material had been filed with the Board.

Interprovincial Pipe Line Limited

Interprovincial filed an application to construct and install two additional 390,000 barrel storage tanks and associated piping at its Sarnia pump station. The Board had this application under review at year end.

NATURAL GAS

The Canadian gas industry maintained a high level of activity throughout 1978. Despite the decrease in exports to the United States, increased domestic consumption, coupled with the higher producer revenues generated by increases in the domestic gas prices, provided continued incentives to the industry to maintain exploration and drilling activity in the conventional producing areas. Specifically, exploration activity in Manitoba, British Columbia and Saskatchewan was significantly above the 1977 level, while in Alberta, exploration activity continued at a high level.

Natural Gas Production and Consumption

Production of marketable natural gas in Canada in 1978 decreased by 131 Bcf below 1977 levels due to a reduced level of exports. Net sales of gas in Canada increased by 59.4 Bcf, reflecting a continuation of moderate growth in demand as experienced in the previous two years. The coming on stream of several petrochemical plants resulted in Alberta registering a 10 percent increase in consumption over the previous year, while the Prairie provinces registered a marginal decline in consumption of three percent.

On a national basis, the commercial sector registered the highest increase in consumption, 9.1 percent. The increase of 6.9 percent in the residential sector resulted from the connection of new customers, particularly in Alberta and Ontario. In the industrial sector, comprising the largest share of the natural gas market, the increase of 1.3 percent above the 1977 level was mainly attributed to the increased industrial consumption in Alberta.

Domestic Natural Gas Pricing

The Board was assigned responsibility for the administration of domestic natural gas pricing, with the enactment of the Petroleum Administration Act (PAA) in 1975. Domestic natural gas prices are established under Part III of the PAA which provides authority for the Government to achieve a uniform price, exclusive of transportation and service costs, for gas sold for consumption in Canada outside of its province of production, and provides the Government with a mechanism whereby the prices of gas and petroleum fuels in Canada can be kept in a reasonably balanced relationship. The Act is also intended to help achieve a balance between the interests of consumers and producers in Canada, while encouraging the development and production of natural gas.

Natural Gas Production

Figure 6

	1974	1975	1976	1977 ^(p)	1978 ^(e)
Net Sales in Canada	1,314.3	1,324.7	1,370.9	1,431.4	1,490.8
Other Cdn Uses*	147.6	175.4	135.1	162.0	90.7
Exports	959.0	946.9	953.6	1,000.3	881.1

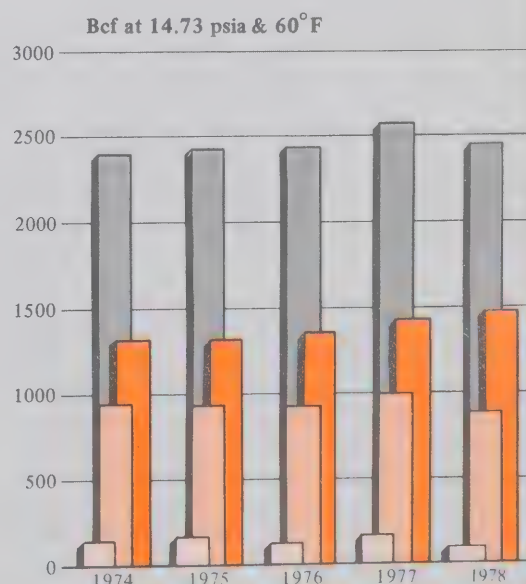
Total Production**	2,420.9	2,447.0	2,459.6	2,593.7	2,462.6
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*Includes Pipeline Fuel & Losses but excludes Field Plant Uses & Losses

**Marketable Pipeline Gas

(p) Preliminary

(e) estimated



Under the Act, the Minister of Energy, Mines and Resources may enter into an agreement with the government of a producer-province to establish prices for natural gas produced in that province. Such an agreement, between the federal government and the government of Alberta, was concluded in October 1975 and was subsequently amended in June 1976, July 1977 and August 1978. The last amendment to the agreement provided for the pricing of natural gas to be based upon a Toronto city-gate reference price of \$2.00 per million British thermal units (MMBtu), effective 1 August 1978. A million British thermal units is approximately equivalent to one thousand cubic feet (Mcf) of natural gas. The agreed-upon reference price is approximately 85 percent of the Btu equivalent value of the crude oil price delivered at Toronto. All other prices for natural gas sold in interprovincial trade are derived from the reference price based on transportation tolls determined by the NEB.

During 1978, under the authority of Part III of the PAA, Domestic Gas Price Restraint, the Board prepared for approval of the Governor in Council seven amendments to the Natural Gas Prices Regulations and twenty-seven special and general orders. The prices established as a result of these new regulations and orders reflected changes in natural gas prices throughout the natural gas marketing area in Canada, outside of the main producing province of Alberta. The reduction in the number of orders and amendments to the Natural Gas Prices Regulations, compared with the number made in previous years, is the result of certain changes in procedures implemented to "streamline" the administration of natural gas pricing under the PAA.

As it has done in past years, the Board coordinated approvals of changes to natural gas pricing east of Alberta with the Alberta Petroleum Marketing Commission, which carries out functions similar to those of the Board with respect to the administration of gas pricing within Alberta.

Natural Gas Export Price

Section 11A of the National Energy Board Part VI Regulations, adopted in 1970, requires the Board to maintain surveillance of natural gas export selling prices and report its findings and recommendations to the Governor in Council when, in the opinion of the Board, there has been a significant increase in prices for competing energy supplies in the export market. Pursuant to this section, the Board conducted a hearing in 1974 on the matter of natural gas exported under existing licenc-

es. In its initial report in July 1974, the Board enunciated, *inter alia*, its principal recommendation that Canadian natural gas as a scarce non-renewable resource should be priced on the basis of its fair value as a commodity in international trade. In that report, the Board recommended that the export price of natural gas be increased in stages towards full market value based on prices of alternative sources in the related United States markets and the replacement value of the gas.

The Board's subsequent reports in 1975, 1976 and 1977 reflected a gradual shift in emphasis from commodity value to substitution or replacement cost as the determinant factor in establishing the appropriate export price.

The current export price of \$2.16(U.S.) was established subsequent to the release of the Board's 1977 Report to the Governor in Council, and came into effect on 21 September 1977. Since that date, the Board has kept the level of the export price for gas under review, and during 1978 has periodically provided advice to the Minister on the appropriateness of the prevailing price.

Natural Gas Exports

Net exports of natural gas to the United States in 1978 totalled 881 Bcf, a decline of over 11 percent from exports during the previous year. The reduction in export sales can be attributed to a combination of several developments in the United States markets for Canadian gas, some of which can be expected to prevail for at least another two to three years. The northeastern United States enjoyed temperate conditions during February and March compared with the unusually cold weather in 1977, when an additional 39.4 Bcf of gas was shipped under emergency orders to relieve fuel shortages. In the Pacific Coast states, the substitutions of alternative fuels for gas, especially heavy fuel oil from Alaska in the industrial market, the availability of abundant hydro power because of unseasonably heavy rains, and energy conservation measures all contributed to a lower demand for Canadian gas.

The Board approved additional daily and annual exports by TransCanada Pipelines Limited at Emerson, Manitoba to compensate for the drop in the heating value of gas exported. This approval was granted to permit the Licensee to fulfill its contractual commitments, but with no increase allowed in the total authorized exports over the term of the licences. The reduced heating value developed because of an increase in the extraction of ethane from the natural gas stream in Alberta.

Towards the end of 1978, the Board approved the removal of the daily limitations on certain exports by TransCanada at Emerson, Manitoba for a one-year period. These variations will permit the Licensee to utilize excess deliverability on a day to day "best efforts" basis to improve deliveries to the export market without impairing deliveries to Canadian customers. The total authorized export over the term of each licence remains unchanged. These changes in the licences require changes in United States import authorizations before they become effective.

An order to export liquefied natural gas via tank truck from the LNG storage facilities of Gaz Métropolitain, inc. in Montreal was issued in November. The authorized export of 603,067 U.S. gallons during the 1978/79 contract period is for use in "peak shaving" service by gas companies in New Hampshire.

Niagara Gas Transmission Limited received approval to increase the maximum daily export limitation in Licence GL-6 from 23 MMcf to 30 MMcf and the maximum annual export limitation from 5,519,987 Mcf to 6,500,000 Mcf for the remainder of the licence period. Niagara stated that it was not seeking to increase the total quantity of gas authorized for export as the increased daily and annual volumes exported would automatically reduce the quantity of gas available under the licence for export in later years.

Union Gas Limited was authorized to export 50 Bcf of SNG (synthetic natural gas) to Northern Natural Gas Company during a five-year period ending 1 April 1983.

During 1978, the Board received several applications for the export of natural gas which remained before the Board at the end of the year, for consideration during 1979. The applications include:

- Niagara Gas Transmission applied for approval to export up to 2 Bcf of gas on a "best efforts" basis, for a one-year period ending 31 October 1979, to serve interruptible customers for whom gas supplies might not otherwise be available.
- TransCanada PipeLines Limited applied for a licence to export 235.5 Bcf of natural gas over a two-year period ending 31 October 1980. TransCanada subsequently amended the application to include Consolidated Natural Gas Limited as co-applicant. The proposed exports would take place at Emerson, Manitoba, with the gas to be sold to four United States gas pipeline companies.

- Sulpetro of Canada Limited applied for a three-year licence to export at Niagara Falls, Ontario an annual volume of 22 Bcf of gas, to be sold to Consolidated Gas Supply Corporation and Transcontinental Gas Pipe Line Corporation over the period 1 November 1978 to 31 October 1980.
- TransCanada PipeLines Limited applied for an amendment to Licence GL-43 to authorize it to divert 1.3 Bcf from use as fuel and unaccounted for losses by Great Lakes Gas Transmission Company to exports for sale by Great Lakes to Natural Gas Pipeline Company of America and to Michigan Consolidated Gas Company.

Natural Gas Pipeline Activities

In December 1977, Polar Gas Limited submitted a partial application for a certificate of public convenience and necessity to construct and operate a pipeline for transporting Arctic Island gas from Melville Island to an interconnection with the TransCanada PipeLines system near Longlac, Ontario. During 1978, Polar Gas filed additional material as part of its application.

Authorization was granted to Westcoast Transmission for the purchase of the Monias Pipeline, consisting of 21.5 miles of 8-inch diameter pipeline connecting the Monias gas field with Westcoast's existing system.

Westcoast Transmission was granted approval under certificate GC-58 to gather and process gas produced from fields in the Grizzly Valley, and the Bullmoose and Sukunka areas in British Columbia. This sour gas pipeline consists of a total of 103.8 miles of pipeline of various diameters plus a natural gas processing plant. This company was also granted approval to construct 99.2 miles of various diameter pipeline to gather and process gas produced from fields in the Silver-Dahl area of British Columbia. Westcoast was also authorized to construct an addition to the Rigel compressor station in the Peace River District.

Many Islands Pipe Lines (Canada) Limited was granted approval to construct a pipeline between Esther, Alberta and Smiley, Saskatchewan. This pipeline consists of 19.6 miles of 8.625-inch diameter pipeline.

Westcoast Transmission was denied approval for the looping of 111.5 miles of its mainline system. This company was also denied an application to amend certificate GC-58 to construct 107.8 miles of fuel gas pipeline of various small diameters for the Bullmoose and Sukunka fields wells operation.

Westcoast Transmission applied for a certificate of public convenience and necessity in relation to the gas pipeline facilities formerly owned by Gas Trunk Line of British Columbia, a subsidiary of Westcoast. These facilities, located in the Fort St. John area in British Columbia, consist of 158.28 miles of gas gathering pipelines of various diameters, two compressor stations and one gas processing plant on the Boundary Lake pipeline. A decision on this application was pending at the end of the year.

TransCanada PipeLines Limited was authorized to sell pipeline facilities in the Montreal area to Gaz Métropolitain. These facilities consist of 5.94 miles of pipelines of various diameters.

In August 1978 Westcoast Transmission submitted the Junior-Sierra Pipeline application for the construction of 83 miles of new gathering pipeline of various diameters in the Fort Nelson area and for additions to the existing sulphur plant at the Fort Nelson Gas Treating Plant. Responses to the Board's deficiency letters were pending at year end.

TransCanada PipeLines carried out an extensive program of pipe replacements to meet population density criteria. Other major expenditures were for installing heavier wall pipe at road crossings, for modifications to meter and compressor stations and for requalification work on the Toronto to Montreal line. Work continued on TransCanada's rerating program to allow for a higher operating pressure on its lines through Northern Ontario.

The Board has received two applications for the extension of gas pipeline facilities in eastern Canada.

TransCanada submitted an application in April 1978 to extend its existing facilities in the province of Quebec to Trois-Rivières and Bécancour. This would be the first phase of a two-phase project to extend the TransCanada system. The second stage would be the further extension to Quebec City and the Eastern Townships area.

Subsequently TransCanada advised the Board the application was to be amended to combine the originally proposed two phases of the extension. At year-end, the Board was awaiting this amendment.

Q & M Pipe Lines Limited submitted an application in October 1978 to construct and operate a gas pipeline in the provinces of Quebec, New Brunswick and Nova

Scotia. This pipeline would involve 758 miles of main-line and 1,138 miles of lateral pipelines of various diameters, two liquefied natural gas storage plants and eight compressor stations.

In 1977, the Board approved applications by Tenneco LNG to import liquefied natural gas (LNG) and to export natural gas and by Lorneterm LNG Limited and TransCanada PipeLines (New Brunswick) Limited to construct and operate facilities in New Brunswick, conditional upon construction commencing by 30 June 1978. The companies subsequently applied to the Board for a two-year extension of this deadline, stating that the extension was necessary because of a regulatory lag in the United States. The Board approved a one-year extension. The United States Government subsequently denied permission to import this gas.

Ethane

Dome Petroleum Limited submitted an application dated 7 February 1978 for a licence to export 269,090,000 barrels of ethane over a 20-year term commencing 1 January 1979, with annual volumes varying between 5,900,000 barrels and 18,950,000 barrels. Subsequently, Dome withdrew this application and submitted another application dated 7 June 1978 for a licence to export 132,750,000 barrels for a 15-year term commencing 1 January 1979, with reduced annual volumes being requested during the last seven years of the application. The Board was examining this application at year-end.

Ethylene

An order was issued to Esso Chemical Canada, a division of Imperial Oil Limited, to export 42,700 barrels of ethylene, which was surplus to Canadian requirements, at Sarnia, Ontario. The export period is from 1 May 1978 to 30 April 1979.

Export Control of Propane and Butanes

The Board has continued its LPG Export Program by issuing export orders under the provisions of Section 16 of the Part VI Regulations. Although the Export Allocation Procedures were slightly modified for the 1978/79 allocation year, the policy aspects of the program remained unchanged from the previous year. Export orders were issued quarterly for the periods April through June, July through September, and October through December, while monthly export approvals were necessary for the months of January, February and March.

As in the past, the Board estimates the total Canadian production of propane and butanes on an annual basis for the allocation year, April through March. Based on forecast Canadian requirements and previously licensed export volumes, the Board establishes an export percentage by which each producer can estimate the total volume of LPG available for export during the allocation year. For the 1978/79 allocation period, the export share was set at 59 percent of total net production for propane and 64 percent of total net production for butanes.

Propane production in 1978 was 44,924 Mb compared with 46,326 Mb for 1977 while butanes production was 25,564 Mb compared with 27,514 Mb for 1977. Production from natural gas accounted for the vast majority of the LPG production, with 79 percent of propane production and 92 percent of butanes production being derived from natural gas.

The total volume of propane exported from Canada in 1978 was 22,259 Mb, or 50 percent of total propane production. Exported butanes volume was 13,923 Mb, or 54 percent of net butanes production.

The Board continued to set monthly minimum export prices for both propane and butanes throughout 1978. For propane, this price was 23 cpg (cents per gallon) f.o.b. Alberta from January through July and 21 cpg from August through December. For butanes it was 24 cpg f.o.b. Alberta from January through June and 22 cpg from July through December.

As the demand for Canadian propane in the United States was well below the level attained during 1977, the underground inventories of propane experienced a substantial gain in 1978, from a low of 4.3 MMb to a high of 10.5 MMb. In 1977 this increase went from a low of 5.0 MMb to a high of 8.0 MMb. For butanes, the change in inventory was not as significant. The 1978 low was 1.3 MMb and the peak inventory was 3.6 MMb. Underground inventories as of 31 December 1978 were 8.2 MMb for propane and 2.4 MMb for butanes.

As a result of the changing circumstances in the LPG industry with respect to supply and prices, both nationally and internationally, the Board has undertaken a review of the current LPG Export Allocation Procedures. In assessing the need to continue or modify the current method of regulating exports of propane and butanes, the Board has solicited the comments of the LPG industry as well as other interested parties, including provincial governments and agencies. Upon reviewing these responses, the Board expects to reach a decision on the future of this program early in 1979.

Propane Export Licence Application

Following a public hearing held in December of 1977 on an application by PanCanadian Gas Products Ltd. for a five-year propane export licence, the Board issued its decision in January 1978 denying the application.

Cochin Pipeline

The Cochin pipeline system, which was completed to Windsor, Ontario in 1978, began transporting ethane in June 1978 and propane deliveries began in October, in time for the winter season demand. The Cochin pipeline offers additional flexibility and capacity for exporting propane, mainly to the mid-western United States which could otherwise only receive Canadian propane by tank car. Cochin also provided facilities allowing the delivery of Alberta ethane to Columbia LNG in Green Springs, Ohio.

Pipeline Regulations

Regulations governing the safe transportation of crude oil and petroleum products were approved by the Governor in Council in September 1978 and subsequently issued.

Changes have been made to the Board's Pipeline Regulations to reflect the switch to SI (Système International d'Unités) on 1 January 1979.

Pipeline safety is an important aspect of the Board's responsibilities, and high standards are reflected in its regulations and orders. On-site inspections are performed by Board staff, particularly during periods of construction.

Pipeline Incidents

The Board continuously monitors pipeline incidents. All are investigated to determine their causes and, where necessary, corrective action is ordered to minimize the possibility of similar failures in the future.

There was only one major oil pipeline incident during the year. Rupture of Interprovincial's 30-inch diameter line between Sarnia and Montreal resulted in a spillage of 18,700 barrels of crude oil. All of the oil was either recovered or removed, and damage to property was minimal. There were no injuries or fatalities as a result of the failure.

A major break occurred in TransCanada PipeLines' Niagara line in May. No injuries or fatalities resulted from this incident which was attributed to stress corrosion cracking at a hardened area. Steps are being taken to detect and replace pipe containing this type of defect. A summary list of incidents which occurred during 1978 is presented in Appendix S-I.

ELECTRICITY

Total Canadian consumption of electric energy in 1978 is estimated to have been 316,206 GW.h, about 5.7 per cent more than in 1977.

At the end of 1977 Canada's total net installed electrical generating capacity was 70,575 MW, of which hydro-electric plants accounted for 40,810 MW, conventional thermal stations 24,699 MW and nuclear power 5,066 MW. Planned additions in 1978 were approximately 1,300 MW of hydro, 1,800 MW of conventional thermal and 800 MW of nuclear power, for a total planned increase of 6 percent.

International and Interprovincial Transfers of Electricity

Gross exports of electricity in 1978 were 21,602 GW.h (19,957 GW.h in 1977) and imports were 2,092 GW.h (2,690 in 1977), resulting in estimated net exports of 19,510 GW.h (17,267 GW.h in 1977). These net exports constituted about 5.8 percent of total Canadian generation.

Export revenues of about \$479 million (\$419 million in 1977) and import costs of about \$2 million (\$13 million in 1977) resulted in a net revenue of approximately million (\$406 million in 1977).

In 1978 total Canadian electricity exports were at the same high levels that had been achieved in 1977. The quantities are shown in Appendices E-V and E-VI.

Very large exports from Ontario to Michigan and New York took place during the last quarter of 1977 and the first quarter of 1978 because of the direct and indirect effects of United States labour disputes which disrupted coal supplies. The direct effects included loss of supplies from United States mines, while indirect problems included frozen coal piles which prevented access to stored fuel at United States generating plants. Ontario Hydro normally secures, by fall each year, coal supplies sufficient for the entire winter and it was able to use this stock pile when required.

The largest import of electricity in 1978 occurred in British Columbia and amounted to about 1,250 GW.h. This import occurred when energy in the form of water was taken into storage in B.C. Hydro's reservoirs for later return to United States utilities or purchase by B.C. Hydro. The opportunity to store energy in the form of water for a neighbouring utility when reservoirs and transmission conditions permit is a valuable economic benefit which may be derived from the construction of an international power line. Such exchanges offer savings for all parties to the transaction.

Low rainfall in 1977 had resulted in Manitoba Hydro purchasing 933 GW.h, mainly in the early part of that year and selling 572 GW.h for a net purchase of 361 GW.h. Above average water quantities in 1978 reversed the situation so that Manitoba Hydro purchased 44 GW.h and sold 3,070 GW.h for a net sale of 3,026 GW.h.

At the end of 1978 The New Brunswick Electric Power Commission began increasing the wheeling of power for two United States utilities. Under this arrangement the two United States utilities, lacking direct interties within the United States, are able to obtain additional supplies of electricity by having The New Brunswick Power Commission import energy into Canada and simultaneously export it to them via other international interconnections.

Returns submitted to the Board by the major exporting utilities showed that of the exports over the major system interconnections in 1978, 34 percent of the energy sold came from hydro generation, 51 percent from imported coal, 11 percent from imported oil, 2 percent from Canadian fossil fuels and 2 percent purchased from adjacent utilities.

Before electricity can be sold to United States markets it must be offered to neighbouring Canadian markets and be found to be surplus to Canadian requirements. For these reasons the Board monitors Canadian power generation and interprovincial transfers although it does not regulate these matters. Electricity supply and demand are tabulated and displayed in Figures 7 and 8. Figure 9 shows the exports and imports in 1978 as well as interprovincial transfers for the 12 months ending October 1978.

Electrical Applications

During 1978 the Board released its decision in respect of a public hearing held late in 1977, and it held a public hearing on one new application.

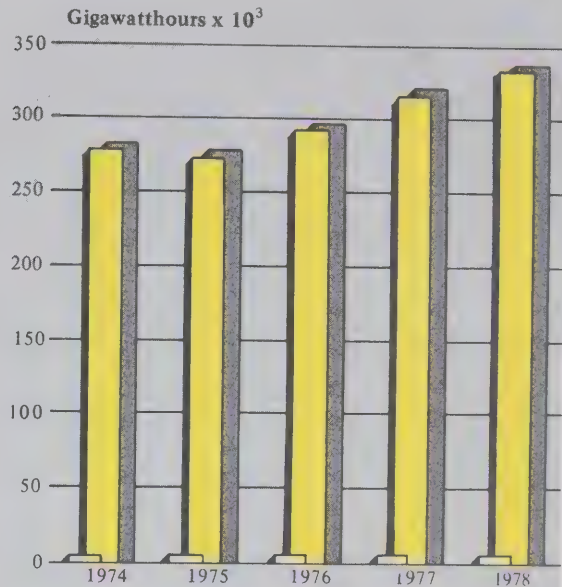
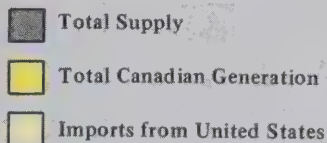
The New Brunswick Electric Power Commission applied for licences to export surplus electric power and energy to Maine Public Service Company and Eastern Maine Electric Cooperative, and for a certificate to upgrade an existing international power line which runs eight miles from Beechwood, New Brunswick to the United States border whence it continues in the United States to Flo's Inn, Maine. A public hearing was held at Fredericton, New Brunswick in November 1977. In February 1978 the Board announced that it had granted

Electricity Supply

Figure 7

	1974	1975	1976	1977 ^(p)	1978 ^(e)
Total Canadian Generation	280,256	273,392	294,043	316,549	335,734
Imports from United States	2,441	3,972	3,590	2,690	2,092
Total Supply	282,697	277,364	297,633	319,239	337,826

(p) preliminary
(e) estimated

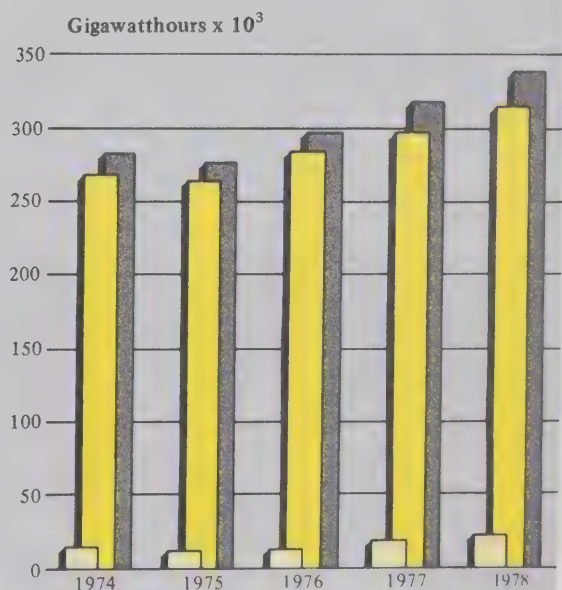
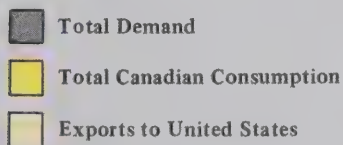


Electricity Demand

Figure 8

	1974	1975	1976	1977 ^(p)	1978 ^(e)
Total Canadian Consumption	267,298	265,989	284,829	299,282	316,206
Exports to United States	15,399	11,375	12,804	19,957	21,620
Total Demand	282,697	277,364	297,633	319,239	337,826

(p) preliminary
(e) estimated



five licences allowing the export of surplus short-term firm power and interruptible energy for a period of four years and eight months from 1 March 1978 to 31 October 1982. The combined licences allow a net annual export of up to 759 GW.h of energy. The Board also granted a certificate to The New Brunswick Power Commission which allowed the upgrading of the existing Béchwood-Flo's Inn 69 kV international power line for operation at 138 kV.

Hydro-Québec applied for a licence to export interruptible power and energy to the Power Authority of the State of New York. Following a public hearing in Montreal in June 1978, the Board announced in September that it had granted a licence to export energy from 6 September 1978 until 31 December 1983. The maximum amount of power is 1,360 MW, including 800 MW of diversity power from April to October which was authorized by the Board under Licence EL-96. The maximum quantity of energy licensed for export in any consecutive 12-month period under the new licence is 10,200 GW.h, less whatever amount is exported under Licence EL-96, already held by Hydro-Québec.

In August of 1978 the Board received an application from the Saskatchewan Power Corporation for a certificate to construct a 230 kV international power line and for licences to export firm and interruptible energy. This would be the first international power line constructed in Saskatchewan. The international power line would be 9.4 miles long running from the Corporation's Boundary Dam station to a point on the international boundary southwest of Estevan, Saskatchewan, from where it would continue in the United States to Tioga, North Dakota and Logan, North Dakota. The Saskatchewan Power Corporation seeks licences to export power and energy to the Basin Electric Power Cooperative which has 156 members in North Dakota, South Dakota, Montana, Wyoming, Colorado, Nebraska, Iowa and Minnesota. The Board will hear this application early in 1979.

New certificates of public convenience and necessity and amending orders issued during 1978 are tabulated in Appendices E-I and E-II.

The Board is empowered to authorize the export of small quantities of power by order. During the year, four such orders were issued.

New licences and orders to export power and energy and amending orders issued in 1978 are tabulated in Appendices E-III and E-IV. Exports of electric energy under each licence in 1978 are tabulated in Appendix E-V and the total electric energy trade for 1978 is shown in Appendix E-VI.

Other Activities

At year end, work was underway on a report on the output, fuel consumption and operating characteristics of Canadian thermal electrical generating stations for 1977. Staff provided advisory services to other departments and outside agencies in various areas during 1978 including the reassessment of Fundy Tidal Power; a review of the environmental guidelines for Fundy Tidal Power and Gull Island; the United States/Canada electricity exchange study and dissemination of information on the WASP (Wien Automatic System Planning) generation program. Studies are also continuing on power system reliability to evaluate the economic benefits of international power lines.

Following up these studies and the regulatory work of the Branch, the staff presented technical papers to Canadian and international electrical engineering societies and other organizations on Fundy Tidal Power, the Board's Environmental Guidelines for International Power Lines and on the application of reliability concepts developed by the staff to power system reliability and economics.

FINANCIAL REGULATORY MATTERS

The Board's involvement in pipeline tariff determination has continued to grow in 1978 with the increasing frequency of applications made in respect of tolls and tariffs. This increasing frequency is largely attributable to changes in factors affected by inflation together with the continuing emergence of regulatory issues such as the method by which income taxes are collected through a company's transportation charges. It is expected that this growth trend will continue in the coming years with the increasing number and complexity of regulatory issues arising from economic and other forms of change.

Revenues from the export of natural gas increased approximately 8.4 percent over the year 1977 to an estimated \$2,216.8 million. This increase stems from natural gas export price increases.

Revenues from exports of crude oil and equivalent hydrocarbons and petroleum products in 1978 totalled an estimated \$1,911.7 million, a decrease of 10.4 percent from the \$2,133.4 million realized from these sources in 1977. This decrease is attributable to reduced export volumes.

International and Interprovincial Transfers of Electricity



Under the provisions of the Petroleum Administration Act and Regulations, audits were conducted of the oil and oil product exports reported to the Board, including the export charges levied and paid thereon. Where warranted, adjustments to the charges paid were made which gave rise to either the assessment of additional charges or the refund of export charge overpayments. During 1978, the Board collected and transmitted to the Receiver General approximately \$294 million. The audit program of licensed exports of propane and butanes was continued in 1978.

During the year the Board maintained its surveillance of the accounting and financial activities of 23 oil and gas pipeline companies under its jurisdiction. This was accomplished through the analysis of periodic and/or special reports required by the Board in conjunction with ongoing field audits to verify compliance with the Board's Uniform Accounting Regulations. Special audits were also carried out to measure compliance with specific directives issued by the Board in relation to accounting and rate-making matters such as the treatment to be accorded particular items of rate base or cost of service.

The Board is continuing the internal review of its regulatory procedures in the above areas with the object of

improving communications between itself, applicants and intervenors in connection with applications made under Part IV of the National Energy Board Act. As a result of this review the National Energy Board Rules of Practice and Procedure were amended (SOR/78-667 22 August 1978) to include regulations pertaining to the information required to be filed by a gas pipeline company applying for an order fixing tolls or tariffs under Part IV of the Act. Development of similar amendments applying to oil pipeline companies continues, their completion being expected in 1979. Also, the Board recognized the need for amendments to the Oil and Gas Uniform Accounting Regulations to update them in respect of currently accepted accounting principles, practices and terminology.

The regulations applicable to oil pipeline companies were amended in 1977 while the work on the regulations applicable to gas pipeline companies continues. Completion of these modifications is expected during 1979.

The proposed construction of a northern pipeline to transport United States natural gas from Alaska to the lower 48 states through Canada resulted in the passage through Parliament of the Northern Pipeline Act, which received Royal Assent on 12 April 1978. In the financial sphere, the Board has a major responsibility pertaining

Dollar Value of Exports of Oil, Gas and Electricity (Gross)

	1974	1975	1976	1977 ^(p)	1978 ^(e)
Petroleum	4,416.2	3,689.1	2,689.4	2,133.4	1,898.4
Natural Gas	503.1	1,166.3	1,631.7	2,045.9	2,215.7
Electricity	169.3	104.9	173.8	419.3	478.6
Total	5,088.6	4,960.3	4,494.9	4,628.6	4,590.1

(e) estimated
(p) preliminary

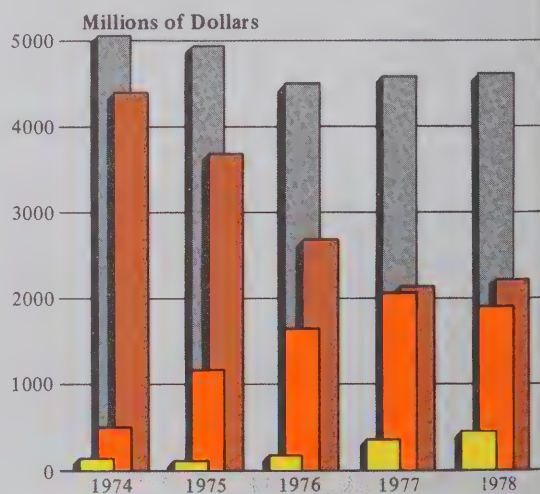
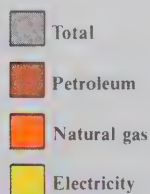


Figure 10

to the financing of the pipeline and to tariff matters. This has necessitated consultation with the Federal Energy Regulatory Commission as provided for in the Canada-U.S. Agreement on the Northern Gas Pipeline. Following the issuance of a rule-making report by the F.E.R.C. on an Incentive Rate of Return scheme, the Board issued a proposal for the Canadian portion of the line on 5 October 1978 and requested the views of interested parties.

The Board conducted public hearings during November and December 1977 on an application by Trans Mountain Pipe Line Company Ltd. with respect to tolls and tariffs. The Board rendered its decision regarding this matter in January 1978. The decision was appealed and the appeal is pending.

In November 1977 Trans-Northern Pipe Line Company filed an application with the Board with respect to tolls and tariffs. The Board examined this application and issued deficiency letters to the Company. No hearing date has yet been set.

ENVIRONMENT

Protection of the environment is a major concern of the Board in considering applications for certificates, licences and orders. The applicants are required, pursuant to the Act, to submit a report consisting of a description of the existing environment, an assessment of the probable environmental impact of proposed oil and gas pipelines and proposed international power lines and export of power, and the steps proposed to be taken to mitigate the effect on the environment.

The environmental information requirements for oil and gas pipelines are set forth in the Board's Rules of Practice and Procedure, and for export of power in Board guidelines. The applications received in 1978 involved a variety of construction and operation activities, each with its unique impact upon the environment. Environmental aspects were assessed with respect to such activities as the construction of new pipelines and international power lines; the looping of existing pipelines; pipeline replacements; increased operating pressure in pipelines; and the generation of power for export.

These applications involved diverse environmental concerns such as impact on permafrost soils, revegetation in tundra areas, impact of herbicide use for control of weeds on rights-of-way, erosion and siltation at water crossings of pipelines, impact on wildlife, fish and forests, air and water quality control, preservation of archaeological and palaeontological sites of significance, protection of agricultural soils, etc.

In addition to the assessment of the environmental implications of pipeline and powerline applications, the Board carried out a number of field inspections to evaluate the effectiveness of environmental protection measures implemented by various pipeline companies during construction. The Board also evaluated a number of post-construction reports from pipeline companies, on the state of the environment disturbed during construction and the effectiveness of the implemented mitigative measures.

At the request of the Northern Pipeline Agency, Board staff assisted in the development of the proposed environmental terms and conditions under the Northern Pipeline Act.

Organization of the National Energy Board

The Board is divided into nine separate branches; the following is a brief outline of the responsibilities of each branch.

Administrative Services Branch

Provides administrative support to the Board, including such functions as finance, personnel, official languages, library, communications, security and office service.

Economics Branch

Advises the Board on general economic and related policy aspects of matters relevant to the Board's responsibilities. More specifically, develops short and long-term forecasts of energy demand and macro-economic projections. Responsible for energy statistics including supply/demand balances for all sources of energy. Provides analyses and advice in relation to projects being assessed by the Board, including macro-economic, regional and socio-economic impact assessments, social cost-benefit, economics of the energy industry, and Canadian content studies. Prepares assessments of the economic implications of federal, provincial and international energy policies, developments and relations.

Electric Power Branch

Advises the Board on all matters concerning electric power including regulatory operations associated with authorizing the construction of international power lines and with licensing exports of power; conducts studies on various aspects of the planning and engineering of electric power systems and power generation.

Energy Resources Branch

Advises on matters of oil and gas exploration, drilling and production. Forecasts trends in oil and gas supply from conventional, oil sands and synthetic sources and independently calculates the reserves and deliverability of gas and the reserves and producibility of oil. The Calgary office of the Energy Resources Branch is engaged in the actual pool by pool calculation of gas and oil reserves.

Engineering Branch

Advises the Board on technical matters relating to safe and economic design, construction, operation and maintenance of oil and gas pipelines and associated fa-

cilities; investigates all pipeline incidents; ensures compliance with Board orders, regulations and applicable codes and standards; provides engineering and environmental assessments on applications before the Board; advises on landowner and right-of-way matters.

Financial Regulatory Branch

Provides advice on rates and accounting matters in respect of regulatory and advisory functions. Analyses and recommends on the financial aspects of construction of oil and gas pipelines, including financial and economic feasibility, methods of financing and the capital structure of applicants. Examines the rate structures including methods of rates, tolls and tariff designs of oil and natural gas pipelines and pricing aspects of oil and natural gas for export. Organizes and conducts field audits of pipeline companies and licensed exporters of oil and gas. Develops uniform accounting regulations for pipeline companies.

Gas Advisory Branch

Acts as the Board's primary advisor on matters affecting natural gas and gas products policy. Provides the staff advice on the pricing of natural gas exports, the administration of Part III of the Petroleum Administration Act which is concerned with domestic natural gas price restraint, and the administration of the propane/butanes export control programme. Analyzes and makes recommendations on economic, market and regulatory aspects of natural gas certificate, rates and export licence applications, provides short-term gas industry and market analysis, and coordinates all matters relative to export controls on ethane and ethylene.

Law Branch

Advises the Board on its statutory powers, prepares regulations and rules of procedure, prepares draft amendments to the Act, examines witnesses at hearings, assists in the preparation and review of submissions to Governor in Council, Reasons for Decision, Orders and Certificates and conducts litigation for and on behalf of the Board.

Oil Policy Branch

Acts as the Board's principal staff source of information and advice on national and international matters affecting oil policy. Provides the staff advice and appraisals for the Board's control over licensed exports and export prices of crude oil and equivalent hydrocarbons and petroleum products.

BOARD MEMBERS

J.G. Stabback	Chairman
C.G. Edge	Vice-Chairman
L.M. Thur	Associate Vice-Chairman
W.A. Scotland	Associate Vice-Chairman (Designated Officer – Northern Pipeline Agency)
R.F. Brooks	Associate Vice-Chairman
J. Farmer	Member
R.A. Stead	Member
J.R. Jenkins	Member

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G. Yorke Slader	Assistant Secretary
Anne Plante	Information Officer
G.G. Michaud	Chief, Secretariat

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M.E. LeClerc	Director General, Special Projects

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T.S. Shwed	Assistant Director, Oil Pipelines
G.E. Marquardt	A/Assistant Director, Right-of-way
C.D. Midwinter	Assistant Director, Northern Pipelines

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V.M. Thomas	Assistant Director, Oil
F.R. Brien	Assistant Director, Gas
J.A. Law	A/Assistant Director, Research and Special Studies

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P.L. Fournier	Assistant Director

LAW BRANCH

F.H. Lamar	General Council
J.M. Hendry	Assistant General Counsel

OIL POLICY BRANCH

P.G. Scotchmer	Director
B.P. Leakey	Assistant Director, Evaluation

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APPENDIX G-1

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR GAS PIPELINES ISSUED DURING 1978

Applicant	Facilities	Estimated Cost	Heard	Issued	Cert. No.
Westcoast Transmission Company Limited	(A) Approximately 15.1 km* of 273.0 mm OD line of pipe (B) Approximately 80.6 km of 508.0 mm OD line of pipe (C) Approximately 54.66 km of 610.0 mm OD line of pipe (D) Approximately 7.9 km of 219.1 mm OD line of pipe — 'Bullmoose Lateral' (E) Approximately 4.6 km of 219.1 mm OD line of pipe — 'Sukunka Lateral' (F) Gas processing plant, to be known as 'Pine River Processing Plant' all in the Province of British Columbia	\$121,972,500	15-18 November 1977	3 February 1978	GC-58 (as amended)
Westcoast Transmission Company Limited	(A) Approximately 9.6 km of 168.3 mm OD line of pipe — 'South East Dahl Pipeline' (B) Approximately 10.0 km of 219.1 mm OD line of pipe — 'North Dahl Pipeline' (C) Approximately 31.45 km of 273.0 mm OD line of pipe — 'Dahl Pipeline' (D) Approximately 30.72 km of 273.0 mm OD line of pipe — 'Silver Pipeline' (E) Approximately 71.50 km of 406.4 mm OD line of pipe — 'Silver Dahl Pipeline' (F) Additional compression facilities, modification to auxiliary facilities at the existing 'Rigel Station, and a 1.6 km condensate loop at the 'Rigel Station' all in the Province of British Columbia	\$ 28,471,900	15-18 November 1977	3 February 1978	GC-59

*Westcoast Transmission applied to the Board using SI units of measurement.

APPENDIX G-II

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1978 CLASS B CONSTRUCTION

Applicant	Facilities	Estimated Cost	Issued	Order No.
Westcoast Transmission Company Limited	Approximately 4.85 miles of 6.625 inch diameter line of pipe together with all appurtenances and works connected therewith, designated 'Red Creek Pipeline', in the Province of British Columbia	\$ 702,500	18 Jan. 1978	XG-1-78 (as amended)
Many Islands Pipe Lines (Canada) Limited	Approximately 19.6 miles of 8-inch diameter line of pipe together with all appurtenances and works connected therewith, in the Provinces of Alberta and Saskatchewan	977,600	15 March 1978	XG-2-78
TransCanada PipeLines Limited	Additional pipeline, being a new permanent Meter Station, known as 'Cookstown Meter Station', and works connected therewith, in the Province of Ontario	51,060	17 Oct. 1978	XG-3-78

CLASS C CONSTRUCTION

Applicant	Facilities	Estimated Cost	Issued	Order No.
TransCanada PipeLines Limited	Certain modifications to be made to its pipeline in the Province of Ontario	\$14,824,149	27 Feb. 1978	XGM-1-78
Alberta Natural Gas Company Ltd.	Certain facilities to be added to its pipeline in the Provinces of Alberta and British Columbia	143,483.50	16 May 1978	XGM-2-78
TransCanada PipeLines Limited	Certain modifications to be made to its pipeline in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Quebec	1,258,217	31 May 1978	XGM-3-78
Westcoast Transmission Company Limited	Certain facilities to be added to its pipeline in the Provinces of Alberta and British Columbia, and in the Yukon and Northwest Territories	14,341,103	28 June 1978	XGM-4-78
TransCanada PipeLines Limited	Certain modifications to be made and certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Quebec	12,924,270	28 June 1978	XGM-5-78
Many Islands Pipe Lines (Canada) Limited	Certain modifications to be made to its pipeline in the Provinces of Alberta and Saskatchewan	6,320	25 July 1978	XGM-6-78
TransCanada PipeLines Limited	Certain modifications and improvements to be made to its pipeline in the Province of Ontario	9,980,402	1 Aug. 1978	XGM-7-78
TransCanada PipeLines Limited	Certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Quebec	15,523,221	13 Sept. 1978	XGM-8-78
TransCanada PipeLines Limited	Certain modifications and improvements to be made to its pipeline in the Province of Ontario	34,210	13 Sept. 1978	XGM-9-78
TransCanada PipeLines Limited	Certain modifications and improvements to be made to its pipeline in the Province of Ontario	383,615	20 Sept 1978	XGM-10-78
TransCanada PipeLines Limited	Certain facilities to be added to its pipeline in the Province of Ontario	267,787	14 Dec. 1978	XGM-11-78

APPENDIX G-III

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1978

Type of Licence	Licensee	Licence Number	Point of Export	Term of Licence		Maximum		
				From	To	Daily MMcf	Annual MMcf	Term MMcf
New Natural Gas Export Licence	Union Gas Limited	GL-50	Emerson, Man.	1/11/78	1/4/83	(a)	(a)	50,000(b)

(a) Maximum in any winter period, 1 November to 1 April, 75 MMcf in any one day or a total of 10,000 MMcf.

(b) Quantity shall not exceed the Btu (joules) equivalent value of the quantity of synthetic gas delivered by Petrosar Limited to Union Gas Limited under the terms of their contract dated 20/11/74.

Type of Order	Licensee	Order Number	Point of Export	Term of Order		Maximum
				From	To	
New Liquefied Natural Gas Export Order	Gaz Métropolitain, inc.	GO-2-78	Montreal, P.Q.	1/11/78	31/10/79	603,067 U.S. gallons
New Ethane Export Order	Dome Petroleum Limited	GO-1-78	Windsor, Ont.	1/7/78	30/9/78	60,000 barrels
New Ethylene Export Order	Esso Chemical Canada, a division of Imperial Oil Limited	EYL-1-78	Sarnia, Ont.	1/5/78	30/4/79	42,700 barrels

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1978

Type of Order	Licensee	Order Number	Date of Issue	Comments
Orders Amending Existing Natural Gas Export Licences (Section 17)	1. TransCanada PipeLines Limited	AO-10-GL-1	10/11/78	Amendment which provides for the conversion to SI system of units.
	2. Alberta and Southern Gas Co. Ltd.	AO-10-GL-3	10/11/78	Amendment, which provides for the conversion to SI system of units.
	3. Westcoast Transmission Company Limited	AO-11-GL-4	10/11/78	Amendment, which provides for the conversion to SI system of units.
	4. Canadian-Montana Pipe Line Company	AO-12-GL-5	10/11/78	Amendment, which provides for the conversion to SI system of units.
	5. Niagara Gas Transmission Limited	AO-18-GL-6	5/10/78	Amendment, which provides for increases in the daily and annual volumes authorized for export, but there is no change in the total volume that may be exported during the term of the licence.
	6. Niagara Gas Transmission Limited	AO-19-GL-6	10/11/78	Amendment, which provides for the conversion to SI system of units.
	7. Alberta and Southern Gas Co. Ltd.	AO-8-GL-16	10/11/78	Amendment, which provides for the conversion to SI system of units.
	8. Canadian-Montana Pipe Line Company	AO-10-GL-17	10/11/78	Amendment, which provides for the conversion to SI system of units.
	9. TransCanada PipeLines Limited	AO-12-GL-18	20/4/78	Amendment varying the maximum daily and annual volumes authorized for export to compensate for the decline in the heating value of gas exported, but no change is authorized in total volume that may be exported during term of licence.
	10. TransCanada PipeLines Limited	AO-13-GL-18	10/11/78	Amendment, which provides for the conversion to SI system of units.
	11. TransCanada PipeLines Limited	AO-14-GL-18	30/11/78	Amendment, which removes daily limitation on gas exports during period ending 31/10/79.
	12. TransCanada PipeLines Limited	AO-11-GL-19	10/8/78	Amendment establishing that the price to be received for "Peaking Service" gas is to be in accordance with specified contractual agreement.
	13. TransCanada PipeLines Limited	AO-12-GL-19	10/11/78	Amendment, which provides for the conversion to SI system of units.
	14. TransCanada PipeLines Limited	AO-16-GL-20	20/4/78	Amendment varying the maximum daily and annual volumes that are authorized for export to compensate for the decline in the heating value of gas exported, but no change is authorized in total volume that may be exported during term of licence.
	15. TransCanada PipeLines Limited	AO-17-GL-20	10/11/78	Amendment, which provides for the conversion to SI system of units.
	16. TransCanada PipeLines Limited	AO-18-GL-20	30/11/78	Amendment, which removes daily limitation on gas exports during period ending 31/10/79.
	17. TransCanada PipeLines Limited	AO-6-GL-21	16/3/78	Amendment, to provide that the quantities of gas exported will have in the aggregate the thermal equivalence of the quantities of gas imported.
	18. TransCanada PipeLines Limited	AO-7-GL-21	10/11/78	Amendment, which provides for the conversion to SI system of units.

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1978

Type of Order	Licensee	Order Number	Date of Issue	Comments
Orders Amending Existing Natural Gas Export Licences (Section 17) (Cont'd)	19. Alberta and Southern Gas Co.	AO-10-GL-24	10/11/78	Amendment, which provides for the conversion to SI system of units.
	20. Canadian-Montana Pipe Line Company	AO-13-GL-25	10/11/78	Amendment, which provides for the conversion to SI system of units.
	21. I.C.G. Transmission Limited	AO-10-GL-28	10/11/78	Amendment, which provides for the conversion to SI system of units.
	22. I.C.G. Transmission Limited	AO-12-GL-29	10/11/78	Amendment, which provides for the conversion to SI system of units.
	23. I.C.G. Transmission Limited	AO-3-GL-30	10/11/78	Amendment, which provides for the conversion to SI system of units.
	24. Alberta and Southern Gas Co. Ltd.	AO-7-GL-35	10/11/78	Amendment, which provides for the conversion to SI system of units.
	25. Canadian-Montana Pipe Line Company	AO-8-GL-36	10/11/78	Amendment, which provides for the conversion to SI system of units.
	26. TransCanada PipeLines Limited	AO-10-GL-37	10/11/78	Amendment, which provides for the conversion to SI system of units.
	27. TransCanada PipeLines Limited	AO-11-GL-37	30/11/78	Amendment, which removes daily limitation on gas exports during period ending 31/10/79, and which provides for annual averaging of exports, but no change is authorized in total volume that may be exported during term of licence.
	28. TransCanada PipeLines Limited	AO-8-GL-38	10/11/78	Amendment, which provides for the conversion to SI system of units.
	29. TransCanada PipeLines Limited	AO-8-GL-39	10/11/78	Amendment, which provides for the conversion to SI system of units.
	30. Westcoast Transmission Company Limited	AO-16-GL-41	26/10/78	Amendment, which extended the period to 31/12/78 during which gas may be delivered at Kingsgate, B.C.
	31. Westcoast Transmission Company Limited	AO-17-GL-41	10/11/78	Amendment, which provides for the conversion to SI system of units.
	32. Westcoast Transmission Company Limited	AO-18-GL-41	14/12/78	Amendment, which extended the period to 31/12/79 during which gas may be delivered at Kingsgate, B.C.
	33. TransCanada PipeLines Limited	AO-2-GL-42	16/3/78	Amendment to provide that the quantities of gas exported will have in the aggregate the thermal equivalence of the quantities of gas imported.
	34. TransCanada PipeLines Limited	AO-3-GL-42	10/11/78	Amendment, which provides for the conversion to SI system of units.
	35. TransCanada PipeLines Limited	AO-9-GL-43	10/11/78	Amendment, which provides for the conversion to SI system of units.
	36. Canadian Lowell Gas Limited	RO-GL-48	14/9/78	Amendment, which revokes Licence No. GL-48

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1978

Type of Order	Licensee	Order Number	Date of Issue	Comments
Orders amending existing ethane export licences (Section 17)	1. Dome Petroleum Limited	AO-4-GL-45	10/11/78	Amendment, which provides for the conversion to SI system of units.
	2. Dome Petroleum Limited	AO-4-GL-47	10/11/78	Amendment, which provides for the conversion to SI system of units.
Orders amending existing propane export licences	1. Dome Petroleum Limited	AO-5-GL-31	10/11/78	Amendment, which provides for the conversion to SI system of units.
	2. Amoco Canada Petroleum Company Ltd.	AO-3-GL-32	10/11/78	Amendment, which provides for the conversion to SI system of units.
	3. PanCanadian Gas Products Ltd.	AO-4-GL-34	10/11/78	Amendment, which provides for the conversion to SI system of units.
	4. Dome Petroleum Limited	AO-3-GL-46	10/11/78	Amendment, which provides for the conversion to SI system of units.
Order amending existing natural gas export order	1. Western Decalta Petroleum Limited	AO-2-MO-49-75	10/11/78	Amendment, which provides for the conversion to SI system of units.
Order amending existing ethane export order	1. Dome Petroleum Limited	AO-1-GO-1-76	10/11/78	Amendment, which provides for the conversion to SI system of units.
Orders amending existing ethylene export orders	1. Dow Chemical of Canada, Limited	AO-1-EYL-1-76	26/4/78	Amendment, which varies the export period.
	2. Dow Chemical of Canada, Limited	AO-2-EYL-1-76	10/11/78	Amendment, which provides for the conversion to SI system of units.
	3. Dow Chemical of Canada, Limited	AO-1-EYL-2-76	10/11/78	Amendment, which provides for the conversion to SI system of units.
	4. Esso Chemical Canada, a division Imperial Oil Limited	AO-1-EYL-1-78	22/6/78	Amendment, which varies the export period.
	5. Esso Chemical Canada	AO-2-EYL-1-78	19/10/78	Amendment, which varies the export period.
	6. Esso Chemical Canada	AO-3-EYL-1-78	10/11/78	Amendment, which provides for the conversion to SI system of units.
Orders amending existing propane export orders	1. Dome Petroleum Limited	AO-1-EPR-908-77	10/11/78	Amendment, which provides for the conversion to SI system of units.
	2. Imperial Oil Limited	AO-1-EPR-913-78	10/11/78	Amendment, which provides for the conversion to SI system of units.
Orders amending existing butanes export orders	1. Dome Petroleum Limited	AO-2-EBU-1-74	10/11/78	Amendment, which provides for the conversion to SI system of units.
	2. Dome Petroleum Limited	AO-1-EBU-132-74	10/11/78	Amendment, which provides for the conversion to SI system of units.
	3. Amoco Canada Petroleum Company Ltd.	AO-1-EBU-133-74	10/11/78	Amendment, which provides for the conversion to SI system of units.
	4. PanCanadian Gas Products Ltd.	AO-1-EBU-134-74	10/11/78	Amendment, which provides for the conversion to SI system of units.
	5. Imperial Oil Limited	AO-1-EBU-906-78	10/11/78	Amendment, which provides for the conversion to SI system of units.

APPENDIX G-IV

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1978

Exporter	Licence or Order Number	Term of Licence or Order			Maximum		
		Point of Export	From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)
NATURAL GAS							
1. TransCanada PipeLines Limited	GL-1(AO-10)	Emerson, Man.	11/4/60	14/5/81	223,000	74,000	1,410,000
2. Alberta & Southern Gas Co. Ltd.	GL-3(AO-10)	Kingsgate, B.C.	30/10/61	30/10/86	458,750	153,270	3,826,000
3. Westcoast Transmission Company Limited	GL-4(AO-11)	Kingsgate, B.C.	10/12/61	9/12/81	152,000	51,000	1,020,000
4. Canadian-Montana Pipe Line Company	GL-5(AO-12)	Cardston & Aden, Alta. ^(a)	31/10/61 14/5/77	30/10/86 14/5/82	36,000	10,950 3,000	273,750
5. Niagara Gas Transmission Limited	GL-6(AO-19)	Cornwall, Ont.	7/9/62	30/6/87	30,000	6,500	121,190
6. Alberta & Southern Gas Co. Ltd.	GL-16(AO-8)	Kingsgate, B.C.	1/11/66 1/11/67	31/10/67 31/10/89	113,125 226,250	37,415 74,830	1,614,000
7. Canadian-Montana Pipe Line Company	GL-17(AO-10)	Cardston & Aden, Alta. ^(a)	1/11/66 1/11/67 14/5/77	31/10/67 31/10/89 14/5/82	12,000 24,000	3,650 7,300 2,000	164,250
8. TransCanada PipeLines Limited	GL-18(AO-14)	Emerson, Man.	22/11/65 1/11/66 30/11/78	31/10/68 31/10/89 31/10/79	25,000 151,000 (c)	8,000 ^(b) 52,300	1,200,000
9. TransCanada PipeLines Limited	GL-19(AO-12)	Philipsburg, Que.	1/11/65	31/10/89	20,700 ^(d)	6,500	108,000
10. TransCanada PipeLines Limited	GL-20(AO-18)	Emerson, Man.	21/11/68 30/11/78	31/10/91 31/10/79	94,000 (c)	32,100	765,000
11. TransCanada PipeLines Limited	GL-21(AO-7) ^(e)	Emerson, Man.	5/11/68	31/10/91	N/S	247,782	6,000,000
12. Alberta & Southern Gas Co. Ltd.	GL-24(AO-10)	Kingsgate, B.C.	1/11/68 1/11/69 1/11/91	31/10/69 31/10/91 31/10/93	121,000 236,000 135,400	38,900 77,900 44,600	1,841,900
13. Canadian-Montana Pipe Line Company	GL-25(AO-13)	Cardston & Aden, Alta. ^(a)	1/11/68 1/11/69 1/11/91	31/10/69 31/10/91 31/10/93	12,000 24,000 13,800	3,650 7,300 4,200	172,650
		Aden, Alta.	27/3/73 ^(f)	14/5/74	99,460	19,892	
			14/5/74 ^(g)	14/5/75	99,460	19,892	
			14/5/75	14/5/76	99,460	10,000	
			14/5/76	14/5/77	49,730	5,000	
14. ICG Transmission Limited	GL-28(AO-10)	Sprague, Man.	1/11/70	31/10/95	2,834	337	8,084
15. ICG Transmission Limited	GL-29(AO-12)	Fort Frances, Ont.	1/11/70	31/10/95	32,323	7,715	192,820
16. ICG Transmission Limited	GL-30(AO-3) ^(h)	Sprague, Man.	1/11/70 9/1/73	31/10/95 31/12/73	46,662 10,296	12,144 N/S	299,990 305
17. Alberta & Southern Gas Co. Ltd.	GL-35(AO-7)	Kingsgate, B.C.	1/11/70	31/10/85	205,000	67,500	1,012,500
18. Canadian-Montana Pipe Line Company	GL-36(AO-8)	Cardston & Aden, Alta. ^(a)	1/11/70	31/10/85	12,000	3,650	54,750
19. TransCanada PipeLines Limited	GL-37(AO-11)	Emerson, Man.	1/11/70 30/11/78	31/10/90 31/10/79	195,800 (c)	71,663	1,433,256
20. TransCanada PipeLines Limited	GL-38(AO-8)	Emerson, Man.	1/11/70	31/10/90	50,000	18,300	366,000
21. TransCanada PipeLines Limited	GL-39(AO-8)	Emerson, Man.	1/11/70	31/10/90	7,200	2,635	52,704
22. Westcoast Transmission Company Limited	GL-41(AO-18)	Huntingdon, B.C. ⁽ⁱ⁾	1/11/71 1/11/72	31/10/72 31/10/89	733,338 809,200	254,982 281,359	5,042,860

APPENDIX G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1978

Exporter	Licence or Order Number	Term of Licence or Order			Maximum		
		Point of Export	From	To	Daily (Mcf)	Annual (MMcf)	Term (MMcf)
NATURAL GAS (Cont'd)							
23. TransCanada PipeLines Limited	GL-42(AO-3) ^(e)	Emerson, Man.	15/04/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,218 92,218	2,129,232
24. TransCanada PipeLines Limited	GL-43(AO-9)	Emerson, Man.	1/11/71	31/10/91	N/S	17,000	340,000
25. Consolidated Natural Gas Limited	GL-44(j)	Emerson, Man.	15/03/72	31/10/92	150,000	45,000	669,000
26. Tenneco LNG Inc.	GL-49	St. Stephen, N.B.	(k)	(l)	32.295 × 10 ⁶ m ³	11.82 × 10 ⁹ m ³	(m)
27. Union Gas Limited	GL-50	Emerson, Man.	1/11/78	1/04/83	(n)	(n)	50,000
28. Western Decalta Petroleum Limited	MO-49-75	Coutts, Alta.	13/09/75	30/06/82	(o)	5	N/S

N/S Not specified

- (a) Notwithstanding the Cardston, Alta. export point, the Licensee may export gas at a place near Aden, Alta. as long as this change does not affect the total quantity of gas authorized for export under this licence and as long as the combined volumes under certain existing licences do not exceed specified quantities to be exported at Aden.
- (b) Interruptible
- (c) Daily limitations do not apply during period 30/11/78 — 31/10/79.
- (d) The Licensee shall not export more than 17,700 Mcf in any one day until all Canadian requirements for contracted gas deliveries, including peak load requirements are met.
- (e) This licence authorizes an export near Emerson, Man. for re-import near Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.
- (f) This export actually commenced on the day when the total quantity of gas authorized by Licence No. GL-8 was exported (approximately June 1973).
- (g) This amendment stipulated a maximum daily quantity of 27,000 Mcf or 450,000 Mcf in any calendar month during the period between May 14, 1974 and the commencement of export authorized for the period May 14, 1974 to May 14, 1975.
- (h) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
- (i) Notwithstanding the Huntingdon, B.C. export point, the Licensee may export gas at a place near Kingsgate, B.C. during the period from Nov. 1, 1973 to Oct. 31, 1979.
- (j) This licence authorizes an export near Emerson, Manitoba. The quantity of gas exported under the authority of this licence shall be equal to the quantities of gas which the licensee imports pursuant to Licence No. GLI-5.
- (k) From the date of Initial Delivery.
- (l) Twenty years and six months after the date of First Regular Delivery or a total term from Initial Delivery not exceeding 25 years.
- (m) The total gas or equivalent quantity expressed in cubic metres of the liquefied natural gas imported pursuant to Licence GLI-7.
- (n) Maximum for winter period, 1 November to 1 April — 75 MMcf per day or a total of 10,000 Bcf in period.
- (o) The quantity of gas that may be exported in any one month shall not be more than 1,000,000 cubic feet.

* Except for SI measurement.

APPENDIX G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1978

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes	
			From	To	Column A (Annual Barrels)	Column B (Annual Barrels)
PROPANE						
1. Dome Petroleum Limited	GL-31(AO-5) ^(a)	Gretna, Man., Elmore, Sask., Sarnia, Ont. and Windsor, Ont.	5/6/73 ^(b)	31/12/73	6,287,500	5,827,500
			1/1/74	31/12/74	5,991,500	5,481,500
			1/1/75	31/12/75	5,913,000	5,338,000
			1/1/76	31/12/76	5,751,500	5,121,500
			1/1/77	31/12/77	5,582,500	4,887,500
			1/1/78	31/12/78	5,457,000	839,500
			1/1/79	31/12/79	5,357,000	839,500
			1/1/80	31/12/80	5,263,000	839,500
			1/1/81	31/12/81	5,114,000	839,500
			1/1/82	31/12/82	4,948,500	839,500
			1/1/83	31/12/83	4,665,500	839,500
			1/1/84	31/12/84	4,316,500	839,500
			1/1/85	31/12/85	3,898,000	839,500
			1/1/86	31/12/86	3,362,000	839,500
			1/1/87	31/12/87	2,930,500	906,000
			1/1/88	31/12/88	2,489,000	1,216,000
			1/1/89	31/12/89	2,078,000	1,241,000
			1/1/90	31/12/90	1,690,000	1,065,000
			1/1/91	31/12/91	1,396,000	1,045,000
			1/1/92	31/12/92	1,339,500	1,040,000
1/1/93	31/12/93	1,233,500	1,025,000			
1/1/94	31/12/94	1,011,000	655,000			
1/1/95	31/12/95	294,000	0			
2. Amoco Canada Petroleum	GL-32(AO-3) ^(c)	Gretna, Man., Sarnia, Ont. and Windsor, Ont.	5/6/73 ^(d)	31/12/73	3,872,500	3,589,500
			1/1/74	31/12/74	3,579,000	3,274,000
			1/1/75	31/12/75	3,533,000	3,189,000
			1/1/76	31/12/76	3,421,500	3,046,500
			1/1/77	31/12/77	3,287,000	2,878,000
			1/1/78	31/12/78	3,197,500	584,000
			1/1/79	31/12/79	3,133,500	584,000
			1/1/80	31/12/80	3,077,000	584,000
			1/1/81	31/12/81	2,987,500	584,000
			1/1/82	31/12/82	2,943,500	584,000
			1/1/83	31/12/83	2,832,500	584,000
			1/1/84	31/12/84	2,610,000	584,000
			1/1/85	31/12/85	2,401,500	584,000
			1/1/86	31/12/86	2,182,500	584,000
			1/1/87	31/12/87	2,024,000	584,000
			1/1/88	31/12/88	1,838,000	584,000
			1/1/89	31/12/89	1,690,000	584,000
			1/1/90	31/12/90	1,546,000	584,000
			1/1/91	31/12/91	1,396,000	584,000
			1/1/92	31/12/92	1,339,500	584,000
1/1/93	31/12/93	1,233,500	584,000			
1/1/94	31/12/94	1,011,000	486,400			
1/1/95	31/12/95	294,000	0			

APPENDIX G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1978

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes	
			From	To	Column A (Annual Barrels)	Column B (Annual Barrels)
3. PanCanadian Gas Products Ltd.	GL-34(AO-4) ^(e)	Gretna, Man., Sarnia or Windsor, Ont.	5/6/73 ^(f)	31/12/73	2,415,000	2,238,000
			1/1/74	31/12/74	2,412,500	2,207,500
			1/1/75	31/12/75	2,380,000	2,149,000
			1/1/76	31/12/76	2,330,000	2,075,000
			1/1/77	31/12/77	2,295,500	2,009,500
			1/1/78	31/12/78	2,259,500	401,500
			1/1/79	31/12/79	2,223,500	401,500
			1/1/80	31/12/80	2,186,000	401,500
			1/1/81	31/12/81	2,126,500	401,500
			1/1/82	31/12/82	2,005,000	401,500
			1/1/83	31/12/83	1,833,000	401,500
			1/1/84	31/12/84	1,706,500	401,500
			1/1/85	31/12/85	1,476,500	401,500
			1/1/86	31/12/86	1,179,500	335,000
			1/1/87	31/12/87	906,500	25,000
			1/1/88	31/12/88	651,000	0
			1/1/89	31/12/89	388,000	0
			1/1/90	31/12/90	144,000	0
4. Dome Petroleum Limited	GL-46(AO-3) ^(g)	Windsor, Ont. Sarnia, Ont.	1/4/74	31/3/75	1,930,000	
			1/4/75	31/3/76	2,560,000	
			1/4/76	31/3/77	2,990,000	
			1/4/77	31/3/78	3,930,000	
			1/4/78	31/3/79	3,900,000	
			1/4/79	31/3/80	3,790,000	
			1/4/80	31/3/81	3,450,000	
			1/4/81	31/3/82	2,950,000	
			1/4/82	31/3/83	2,400,000	
			1/4/83	31/3/84	2,100,000	

- (a) This licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-26 with Licence No. GL-31 whereby certain quantities of the propane exported near Gretna, Manitoba and Elmore, Saskatchewan is imported into and exported from Canada near Sarnia and Windsor, Ontario. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import that volume of propane authorized for export during that period as provided by the licence. The Licensee shall import all such propane exported which is in excess of the volumes stipulated in Column B.
- (b) This period includes the volumes of propane exported and imported pursuant to Licences GL-26 and GL-31 during the part of 1973 prior to the day of issue of this order.
- (c) This Licence authorized additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-27 with Licence No. GL-32. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.
- (d) This period includes the volumes of propane exported and imported pursuant to Licences GL-27 and GL-32 during the part of 1973 prior to the day of the issue of this order.
- (e) This Licence authorizes additional propane exports and combines certain propane volumes authorized for export and import under Licence No. GL-33 with Licence No. GL-34. The Licence provides that the Licensee shall not export more propane than the volumes stipulated in Column A in each period indicated as set forth and may import all or any part thereof of such propane exported during that period provided the Licensee shall import all such propane exported which is in excess of volumes stipulated in Column B.
- (f) This period includes the volumes of propane exported and imported pursuant to Licences GL-33 and GL-34 during the part of 1973 prior to the day of the issue of this order.
- (g) This is an import-export licence whereby no propane may be exported at Windsor, Ontario that has not been imported at Sarnia, Ontario. Notwithstanding the above export or import points, the Licensee may export propane at Sarnia, Ontario, and import propane at Windsor, Ontario, during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.

APPENDIX G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1978

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Export Volumes (Barrels)*
			From	To	
ETHANE					
1. Dome Petroleum Limited	GL-45(AO-4)(a)	Windsor, Ont.	1/04/74	31/03/75	1,830,000
			1/04/75	31/03/76	1,830,000
			1/04/76	31/03/77	1,830,000
			1/04/77	31/03/78	1,940,000
			1/04/78	31/03/79	3,357,000
			1/04/79	31/03/80	3,400,800
			1/04/80	31/03/81	3,467,000
			1/04/81	31/03/82	3,577,000
			1/04/82	31/03/83	3,617,000
			1/04/83	31/03/84	3,480,800
2. Dome Petroleum Limited	GL-47(AO-4)	Elmore, Sask. & Windsor, Ont.	1/11/78(b)	31/12/78	(b)
			1/01/79	31/12/79	14,000,000
			1/01/80	31/12/80	13,900,000
			1/01/81	31/12/81	13,000,000
			1/01/82	31/12/82	9,900,000
			1/01/83	31/12/83	8,900,000
			1/01/84	31/12/84	7,500,000
			1/01/85	31/12/85	2,900,000
3. Dome Petroleum Limited	GO-1-76(AO-1)(c)	Elmore, Sask.	1/01/78	31/12/85	25,000 Barrels per year
ETHYLENE					
1. Dow Chemical of Canada Limited	EYL-1-76(AO-2)	Elmore, Sask.	1/01/80	31/12/89	350,000,000 lbs./yr.
2. Dow Chemical of Canada Limited	EYL-2-76(AO-1)(d)	Elmore, Sask.	1/01/78	31/12/97	150,000,000 lbs./yr.
3. Esso Chemical Canada, a division of Imperial Oil Limited	EYL-1-78(AO-3)	Sarnia, Ont.	1/05/78	30/04/79	42,700

(a) This licence authorizes an export near Windsor, Ontario. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Sarnia, Ontario. Notwithstanding the above export and import points, the licensee may export ethane at Sarnia, Ontario, and import ethane at Windsor, Ontario during a specified period terminating when leave to open the pipeline authorized under certificate is granted by the Board.

(b) This licence provides for two commencement dates, namely, the first delivery of ethane into Cochin Pipelines Ltd. or January 1, 1979, whichever is earlier. The quantity of ethane that may be exported in the period in 1978 ending on December 31, 1978, shall not exceed that quantity which is the same percentage of 14,100,000 barrels, that the number of days between the date of commencement of the licence term and December 31, 1978 is to 365 days.

(c) The Licensee may export under this order only those quantities of ethane which are to be imported and shall import the same quantity of ethane so exported.

(d) This licence authorizes an export at Elmore, Saskatchewan and such ethylene exported under this Order shall be imported into Canada at Windsor, Ontario.

* Except otherwise noted.

APPENDIX G-V

EXPORTS OF NATURAL GAS

Exporter and Licence/Order	Maximum (MMcf)										Remaining ^(a) Under Licences
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/73	1974	1975	1976	1977	1978	Cumulative to 31/12/78	Total Authorized Exports	
1. TransCanada PipeLines Limited GL-1(AO-10)(c)	223,000	74,000	933,755	74,391	73,487	74,102	72,320	71,049	1,299,103	1,410,000	110,897
2. TransCanada PipeLines Limited GL-2(AO-7)	96,900 ^(b)	20,663 ^(b)	62,415	—	—	—	—	—	62,415	N/S	N/A
3. Alberta & Southern Gas Co. Ltd. GL-3(AO-10)(c)	458,750	153,270	1,859,690	138,837	151,464	158,273	157,787	140,324	2,606,374	3,826,000	1,219,626
4. Westcoast Transmission Company Limited GL-4(AO-11)	152,000	51,000	554,078	46,196	48,324	46,465	48,385	39,478	782,926	1,020,000	237,074
5. Canadian-Montana Pipe Line Company GL-5(AO-12)(c)(d)	36,000	10,950 ^(e)	133,201	11,032	10,777	10,885	7,777	13,645	187,318	273,750	86,432
6. Niagara Gas Transmission Limited GL-6(AO-19) 23/12/70 — 31/12/71 01/11/76 — 31/10/77	30,000 30,000 30,000	6,500 6,700 6,000	47,173	5,556	5,497	5,537	5,955	6,231	75,949	121,190	45,241
7. Canadian-Montana Pipe Line Company GL-8(AO-1)	99,460	19,892	220,000	—	—	—	—	—	220,000	220,000	N/A
8. Alberta & Southern Gas Co. Ltd. GL-16(AO-8)(c) 01/11/66 — 31/10/67 01/11/67 — 31/10/89	113,125 226,250	37,415 74,830	471,687	74,162	76,984	78,606	78,594	68,194	848,228	1,614,000	765,772
9. Canadian-Montana Pipe Line Company GL-17(AO-10)(c)(d) 01/11/66 — 31/10/67 01/11/67 — 31/10/89	12,000 24,000	3,650 7,300 ^(f)	48,466	7,355	7,185	7,256	11,242	6,779	88,283	164,250	75,967
10. TransCanada PipeLines Limited GL-18(AO-14) 22/11/65 — 31/10/68(g) 01/11/66 — 31/10/89 07/12/78 — 31/10/79	25,000 151,000 N/A	8,000 52,300	274,799	42,779	42,182	42,578	42,461	42,743	487,542	1,200,000	712,458
11. TransCanada PipeLines Limited GL-19(AO-12)	17,700	6,500	17,440	4,891	4,124	4,066	4,263	4,224	39,007	108,000	68,993
12. TransCanada PipeLines Limited GL-20(AO-18)(c) 21/11/68 — 31/10/91 07/12/78 — 31/10/79	94,000 N/A	32,100 32,100	152,193	31,974	31,974	32,062	32,028	31,920	312,150	765,000	452,850
13. TransCanada PipeLines Limited GL-21(AO-7)(h)	N/S	247,782	1,081,145	214,189	210,281	218,499	210,541	212,305	2,146,960	6,000,000	3,853,040
14. TransCanada PipeLines Limited GL-22(AO-4)	N/S	N/S	2,592	—	—	—	—	—	2,592	3,000	N/A
15. Westcoast Transmission Company Limited PC1955-958(AO-2)(i) 23/06/55 — 31/12/65 01/01/66 — 02/10/77	N/S 303,450	N/S N/S	1,354,052	—	—	—	—	—	1,354,052	N/A N/A	N/A N/A
16. Westcoast Transmission Company Limited GL-23(AO-7)(i) 01/11/66 — 31/10/67 01/11/67 — 21/02/68 22/02/68 — 31/10/88	101,150 101,150 202,300	36,920 24,579 74,040	257,112	—	—	—	—	—	257,112	1,514,720	N/A

APPENDIX G-V (Cont'd)

EXPORTS OF NATURAL GAS

Exporter and Licence/Order	Maximum (MMcf)										
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/73	1974	1975	1976	1977	1978	Cumulative to 31/12/78	Total Authorized Exports	Remaining ^(a) Under Licences
17. Alberta & Southern Gas Co. Ltd. GL-24(AO-10)(c) 01/11/68 — 31/10/69 01/11/69 — 31/10/91 01/11/91 — 31/10/93	121,000 236,000 135,400	38,900 77,900 44,600	316,813	83,076	84,889	86,036	84,101	77,865	732,780	1,841,900	1,109,120
18. Canadian-Montana PipeLine Company GL-25(AO-13)(c)(d) 01/11/68 — 31/10/69 01/11/69 — 31/10/91 01/11/91 — 31/10/93 27/03/73 — 14/05/75 14/05/75 — 14/05/76 14/05/76 — 14/05/77	12,000 24,000 13,800 99,460 99,460 49,730	3,650 7,300 4,200 19,892 10,000 5,000	45,295	26,047	20,626	13,864	7,007	5,104	117,943	172,650	54,707
19. ICG Transmission Limited GL-28(AO-10)(c)	2,834	337	398	325	390	365	312	338	2,129	8,084	5,955
20. ICG Transmission Limited GL-29(AO-12)	32,323	7,715	22,786	7,448	6,816	7,338	6,957	6,369	57,714	192,820	135,106
21. ICG Transmission Limited GL-30(AO-3)(j)	46,662	12,144	30,931	11,114	9,654	10,605	10,969	10,280	83,553	299,990	216,437
22. Alberta & Southern Gas Co. Ltd. GL-35(AO-7)(c)	205,000	67,500	211,879	61,652	66,896	69,548	69,614	58,675	538,263	1,012,500	474,237
23. Canadian-Montana PipeLine Company GL-36(AO-8)(c)(d)	12,000	3,650	11,550	3,677	3,592	3,628	2,592	2,552	27,593	54,750	27,157
24. TransCanada PipeLines Limited GL-37(AO-11)(c) 01/11/70 — 31/10/90 07/12/78 — 31/10/79	195,800 N/A	71,663 71,663	223,710	71,467	71,467	71,663	71,588	71,346	581,241	1,433,256	852,015
25. TransCanada PipeLines Limited GL-38(AO-8)	50,000	18,300	57,132	18,250	18,250	18,300	18,250	18,250	148,432	366,000	217,568
26. TransCanada PipeLines Limited GL-39(AO-8)	7,200	2,635	8,276	2,628	2,628	2,635	2,628	2,628	21,423	52,704	31,281
27. Westcoast Transmission Company Limited GL-40(AO-1)(i)	75,863	27,770	2,560		—	—			2,560	554,200	551,640
28. Westcoast Transmission Company Limited GL-41(AO-18)(i) 01/11/71 — 31/10/72 01/11/72 — 31/10/89	733,338 809,200	254,982 281,359	566,671	240,462	214,119	214,590	234,075	209,578	1,679,493	5,042,860	3,363,367
29. TransCanada PipeLines Limited GL-42(AO-3)(h) 15/04/71 — 31/10/71 01/11/71 — 31/10/94	N/S N/S	8,218 92,218	184,779	79,716	78,261	81,320	78,358	79,014	581,447	2,129,232	1,547,785
30. TransCanada PipeLines Limited GL-43(AO-9)	N/S	17,000	21,797	6,838	5,200	5,781	2,900	3,826	46,342	340,000	293,658
31. Consolidated Natural Gas Limited GL-44(k)	150,000	45,000	31,006	19,503	15,725	14,252	13,438	13,143	107,067	669,000	561,933
32. Patrick T. Buckley GO-1-68(l)	1,000	5	24					—	24	N/S	N/A
33. Western Decalta Petroleum Limited MO-49-75(AO-2)	1,000	5	—				—		—	N S	N A

APPENDIX G-V (Cont'd)

EXPORTS OF NATURAL GAS

Exporter and Licence/Order	Maximum (MMcf)										
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/73	1974	1975	1976	1977	1978	Cumulative to 31/12/78	Total Authorized Exports	Remaining(a) Under Licences
34. Union Gas Company of Canada Limited EO-2-63	N/S	N/S	56	—	—	—	—	—	56	200	N/A
35. TransCanada PipeLines Limited EO-1-70	N/S	N/S	25	—	—	—	—	—	25	40	N/A
36. TransCanada PipeLines Limited EO-6-70	N/S	N/S	124	—	—	—	—	—	124	125	N/A
37. TransCanada PipeLines Limited EO-2-72	N/S	N/A	120	—	—	—	—	—	120	500	N/A
38. TransCanada PipeLines Limited EO-5-72	40,000	N/S	21	—	—	—	—	—	21	40	N/A
39. Gaz Métropolitain, inc. EO-2-70(AO-1)	N/A	N/A	151	—	—	—	—	—	151	195	N/A
40. Gaz Métropolitain, inc. EO-3-70(AO-1)	N/A	N/A	108	—	—	—	—	—	108	160	N/A
41. Gaz Métropolitain, inc. EO-5-70(AO-1)	N/A	N/A	614	—	—	—	—	—	614	673	N/A
42. Gaz Métropolitain, inc. EO-8-70	N/A	N/A	150	—	—	—	—	—	150	151	N/A
43. Gaz Métropolitain, inc. EO-2-71	N/A	N/A	491	—	—	—	—	—	491	724	N/A
44. Gaz Métropolitain, inc. EO-3-71	N/A	N/A	537	—	—	—	—	—	537	696	N/A
45. Gaz Métropolitain, inc. EO-4-71	N/A	N/A	84	—	—	—	—	—	84	120	N/A
46. Gaz Métropolitain, inc. EO-7-72	N/A	N/A	247	—	—	—	—	—	247	532	N/A
47. Gaz Métropolitain, inc. EO-1-73	N/A	N/A	10	—	—	—	—	—	10	190	N/A
48. Gaz Métropolitain, inc. GO-2-73	N/A	N/A	708	—	—	—	—	—	708	813	N/A
49. TransCanada PipeLines Limited EO-1-74	150	N/A	—	79	—	—	—	—	79	450	N/A
50. TransCanada PipeLines Limited EO-2-74	N/S	N/A	—	67	—	—	—	—	67	140	N/A
51. TransCanada PipeLines Limited EO-1-75	N/A	N/A	—	—	210	—	—	—	210	480	N/A
52. TransCanada PipeLines Limited EO-2-75	N/A	N/A	—	—	2	—	—	—	2	40	N/A
53. TransCanada PipeLines Limited EO-1-77(AO-1)	N/A	N/A	—	—	—	—	30,000	—	30,000	30,000	N/A
54. Gaz Métropolitain, inc. GO-1-77	N/A	N/A	—	—	—	—	198	—	198	215	N/A
55. Westcoast Transmission Company EO-2-77	N/A	N/A	—	—	—	—	3,100	—	3,100	3,100	N/A
56. Westcoast Transmission Company EO-3-77	N/A	N/A	—	—	—	—	877	—	877	1,200	N/A

APPENDIX G-V (Cont'd)

EXPORTS OF NATURAL GAS

Exporter and Licence/Order	Maximum (MMcf)										Remaining(a) Under Licences
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/73	1974	1975	1976	1977	1978	Cumulative to 31/12/78	Total Authorized Exports	
57. TransCanada PipeLines Limited EO-4-77(AO-1)	N/A	N/A	—	—	—	—	1,300	—	1,300	3,300	N/A
58. Canadian-Montana PipeLine Company EO-5-77	N/A	N/A	—	—	—	—	3,000	—	3,000	3,000	N/A
59. TransCanada PipeLines Limited EO-6-77	N/A	N/A	—	—	—	—	599	—	599	600	N/A
60. Gaz Métropolitain, inc. GO-2-77	N/A	N/A	—	—	—	—	150	—	150	162	N/A
61. Gaz Métropolitain, inc. GO-3-77(AO-2)	N/A	N/A	—	—	—	—	224	—	224	243	N/A
62. Union Gas Limited GL-50 (m)	75,000	10,000	—	—	—	—	—	—	—	50,000	50,000
63. Gaz Métropolitain, inc. GO-2-78	N/S	N/S	—	—	—	—	—	—	—	53	53
Gross Exports			9,208,848	1,283,709	1,261,003	1,278,254	1,313,593	1,195,859	15,541,265		
Deduct Re-Export of Imports:											
Item 31, GL-44 (k)			31,006	19,503	15,725	14,252	13,438	13,143	107,067		
Item 37, EO-2-72			120	—	—	—	—	—	120		
Item 38, EO-5-72			21	—	—	—	—	—	21		
Item 49, EO-1-74			—	79	—	—	—	—	79		
Item 50, EO-2-74			—	67	—	—	—	—	67		
Item 51, EO-1-75			—	—	210	—	—	—	210		
Item 52, EO-2-75			—	—	2	—	—	—	2		
Deduct Exports for Re-Import:											
Item 13, GL-21 (h)			1,081,145	214,189	210,281	218,499	210,541	212,305	2,146,960		
Item 21, GL-30 (j)			30,931	11,114	9,654	10,605	10,969	10,280	83,553		
Item 29, GL-42 (h)			184,779	79,716	78,261	81,320	78,358	79,014	581,447		
Item 34, EO-2-63			56	—	—	—	—	—	56		
Net Exports			7,880,790	959,042	946,870	953,578	1,000,287	881,116	12,621,683		

(a) It may not be possible to export total volumes remaining under licences due to restrictions on peak day and annual volumes.

(b) This licence authorizes an export of 30,000 MMcf in the period 01/11/70 to 31/03/72 and an additional export of 15,000 MMcf on an interruptible basis in the year commencing 1 November 1970.

(c) Volumes exceeding licenced annual amounts were operating under make-up conditions of licences for accumulated shortfalls in previous periods, tolerance and temporary operating allowances.

(d) Licences GL-5, GL-17, GL-25 and GL-36 must not exceed a combined export total at Aden of 99,460 Mcf per day or 19,892 MMcf in any consecutive 12-month period.

(e) This licence authorizes an additional 3,000 MMcf per year during the period 14/05/77 to 14/05/82.

(f) This licence authorizes an additional 2,000 MMcf per year during the period 14/05/77 to 14/05/82.

(g) Interruptible.

(h) This is an export at Emerson, Manitoba for re-import at Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.

(i) On the day that first delivery of gas was made under licence GL-41, licences PC1955-958, GL-23 and GL-40 were revoked.

(j) This is an export at Sprague, Manitoba for re-import at Rainy River, Ontario.

(k) This is a re-export at Emerson, Manitoba for volumes imported under licence GLI-5 at Willow Creek, Saskatchewan.

(l) Formerly licence GL-7. Includes 1.3 Mcf formerly exported under licence GL-7.

(m) This licence is for the exportation of natural gas at Emerson, Manitoba by displacement of synthetic gas produced at Petrosar Ltd. in Sarnia, Ontario.

Figures may not total due to rounding.

N/S Not specified.

N/A Not applicable.

APPENDIX G-VI

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS AND ETHANE IN 1978

Type of Order	Licensee	Order Number	Date of Issue	Comments
Orders amending existing natural gas import licences (Section 17)	1. TransCanada PipeLines Limited	AO-7-GL-21	10/11/78	Amendment, which provides for the conversion to SI system of units.
	2. I.C.G. Transmission Limited	AO-3-GL-30	10/11/78	Amendment, which provides for the conversion to SI system of units.
	3. TransCanada PipeLines Limited	AO-3-GL-42	10/11/78	Amendment, which provides for the conversion to SI system of units.
	4. Consolidated Natural Gas Limited	AO-2-GL1-5	10/11/78	Amendment, which provides for the conversion to SI system of units.
	5. Canadian Lowell Gas Limited	RO-GL1-6	14/ 9/78	Amendment, which revokes Licence No. GL1-6.
Order amending existing ethane import licence (Section 17)	1. Dome Petroleum Limited	AO-4-GL-45	10/11/78	Amendment, which provides for the conversion to SI system of units.
Orders amending existing natural gas import orders (Section 17)	1. Border Utilities Ltd.	AO-2-GO-2-66	10/11/78	Amendment, which provides for the conversion to SI system of units.
	2. Canadian Western Natural Gas Company Limited	AO-3-GO-6-66	10/11/78	Amendment, which provides for the conversion to SI system of units.

APPENDIX G-VII

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS AND ETHANE AS AT 31 DECEMBER 1978

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Imports Volumes		
			From	To	Daily (Mcf)	Annual (MMcf)*	Term (MMcf)*
Natural Gas							
1. TransCanada Pipe Lines Limited	GL-21(AO-7) ^(a)	Sault Ste. Marie and Sarnia, Ont.	5/11/68	31/10/91	N/S	247,782	6,000,000
2. ICG Transmission Limited	GL-30(AO-3) ^(b)	Rainy River, Ont.	1/11/70	31/10/95	12,144	299,990	
3. TransCanada Pipe Lines Limited	GL-42(AO-3) ^(a)	Sault Ste. Marie and Sarnia, Ont.	15/04/71 1/11/71	31/10/71 31/10/94	N/S N/S	8,128 92,218	2,129,232
4. Consolidated Natural Gas Limited	GLI-5(AO-2)	N/S	15/03/72	31/10/92	150,000	45,000	669,000
5. Tenneco LNG Inc.	GLI-7	Saint John, N.B.	(c)	(d)	N/S	418.68 x 10 ⁶ GJ	8 373.6 x 10 ⁶ GJ
6. Border Utilities Limited	GO-2-66(AO-2)	Coutts, Alberta	2/06/66	14/09/85	1,000	N/S	N/S
7. Canadian Western Natural Gas Company Limited	GO-6-66(AO-3)	Coutts, Alberta	22/09/66	14/09/85	1,000	N/S	N/S

(a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(b) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(c) From the date of Initial Delivery.

(d) Twenty years and six months after the date of First Regular Delivery not exceeding 25 years.

* Except for SI measurement.

N/S Not specified.

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Volume Barrels
			From	To	
Ethane					
1. Dome Petroleum Limited	GL-45(AO-4)(a)	Sarnia, Ontario	1/4/74	31/03/75	1,830,000
			1/4/75	31/03/76	1,830,000
			1/4/76	31/03/77	1,830,000
			1/4/77	31/03/78	1,940,000
			1/4/78	31/03/79	3,357,000
			1/4/79	31/03/80	3,400,800
			1/4/80	31/03/81	3,467,000
			1/4/81	31/03/82	3,577,000
			1/4/82	31/03/83	3,617,000
			1/4/83	31/03/84	3,480,800
2. Dome Petroleum Limited	GO-1-76(AO-1)(b)	Windsor, Ontario	1/1/78	31/12/85	25,000 Barrels per yr.

(a) This licence authorizes an import near Sarnia, Ontario. The quantity of ethane imported under the authority of this licence shall be equal to the quantities of ethane which the licensee exports near Windsor, Ontario. Notwithstanding the export and import points specified in Licence GL-45, the Licensee may export ethane at Sarnia, Ontario, and import ethane at Windsor, Ontario during a specified period terminating the day that leave to open the pipeline authorized under certificate is granted by the Board.

(b) The Licensee may export under this order only those quantities of ethane which are to be imported and shall import the same quantity of ethane so exported.

APPENDIX G-VIII

IMPORTS OF NATURAL GAS

Importer and Licence/Order	Maximum (MMcf)										Remaining ^(a) Under Licences
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/73	1974	1975	1976	1977	1978	Cumulative to 31/12/78	Total Authorized Imports	
1. Coutts Gas Company Limited PC1955-1742	N/S	120	797	—	—	—	—	—	797	2,340	N/A
2. Border Utilities Ltd. GO-2-66(AO-2)	1,000	N/S	270	30	35	29	30	34	428	N/S	N/A
3. Canadian Western Natural Gas Company Ltd. GO-6-66(AO-3)	1,000	N/S	577	1	31	16	1	32	657	N/S	N/A
4. Union Gas Company of Canada Limited PC1956-1848	N/S	5,500	72,564	—	—	—	—	—	72,564	N/S	N/A
5. Union Gas Company of Canada Limited GLI-1	55,000	15,500	112,473	13,231	10,153	4,007	—	—	139,864	167,042 ^(b)	N/A
6. TransCanada Pipelines Limited GLI-2(AO-2)											
01/11/65 — 01/11/66	N/S	25,500	77,166	—	—	—	—	—	77,166	86,500	N/A
01/11/66 — 01/11/67	N/S	30,400									
01/11/67 — 01/11/68	N/S	15,300									
01/11/68 — 01/11/69	N/S	10,200									
01/11/69 — 01/11/70	N/S	5,100									
7. Tecumseh Gas Storage Limited GLI-3	20,000	3,000	5,896	—	—	—	—	—	5,896	5,896 ^(b)	N/A
8. TransCanada PipeLines Limited GLI-4(AO-6)	N/S	N/S	79,029	—	—	—	—	—	79,029	82,303	N/A
9. Consolidated Natural Gas Limited GLI-5(AO-2)(c)	150,000	45,000	31,274	19,663	15,769	14,654	13,847	13,445	108,652	669,000	560,348
10. TransCanada PipeLines Limited GL-21(AO-7)(d)	N/S	247,782	1,080,971	214,392	209,350	218,499	210,541	212,305	2,146,057	6,000,000	3,853,943
11. ICG Transmission Limited GL-30(AO-3)(e)	46,662	12,144	30,931	11,114	9,654	10,605	10,969	10,280	83,553	299,990	216,437
12. TransCanada PipeLines Limited GL-42(AO-3)(d)											
15/04/71 — 31/10/71	N/S	8,218	185,050	79,791	77,914	81,320	78,358	79,014	581,447	2,129,232	1,547,785
01/11/71 — 31/10/94	N/S	92,218									
13. TransCanada PipeLines Limited EO-2-62	N/S	N/S	2	—	—	—	—	—	2	5	N/A
14. TransCanada PipeLines Limited EO-1-63	70,000	N/S	199	—	—	—	—	—	199	1,000	N/A
15. Union Gas Company of Canada Limited EO-2-63	N/S	N/S	56	—	—	—	—	—	56	200	N/A
16. Union Gas Company of Canada Limited EO-3-63	N/S	N/S	1,083	—	—	—	—	—	1,083	1,965 ^(b)	N/A
17. TransCanada PipeLines Limited EO-1-64	140,000	N/S	2,510	—	—	—	—	—	2,510	2,500	N/A
18. TransCanada PipeLines Limited EO-2-64(AO-1)	150,000	N/S	1,757	—	—	—	—	—	1,757	3,450	N/A
19. Union Gas Company of Canada Limited EO-2-66(AO-1)	N/S	N/S	7,861	—	—	—	—	—	7,861	7,861 ^(b)	N/A
20. Union Gas Company of Canada Limited EO-1-67	N/S	N/S	7,861	—	—	—	—	—	7,861	7,861 ^(b)	N/A

APPENDIX G-VIII (Cont'd)

IMPORTS OF NATURAL GAS

Importer and Licence/Order	Maximum (MMcf)										
	Daily (Mcf)	Annual (MMcf)	Cumulative to 31/12/73	1974	1975	1976	1977	1978	Cumulative to 31/12/78	Total Authorized Imports	Remaining ^(a) Under Licences
21. TransCanada PipeLines Limited EO-2-67	N/S	N/S	389	—	—	—	—	—	389	500	N/A
22. Westcoast Transmission Company Limited EO-4-70	N/A	N/A	1	—	—	—	—	—	1	1	N/A
23. TransCanada PipeLines Limited EO-1-72	100,000	N/A	121	—	—	—	—	—	121	500	N/A
24. TransCanada PipeLines Limited EO-4-72	40,000	N/A	19	—	—	—	—	—	19	40	N/A
25. TransCanada PipeLines Limited EO-1-74	150	N/A	—	79	—	—	—	—	79	450	N/A
26. TransCanada PipeLines Limited EO-2-74	N/S	N/A	—	66	—	—	—	—	66	140	N/A
27. TransCanada PipeLines Limited EO-1-75	120,000	N/A	—	—	208	—	—	—	208	480	N/A
28. TransCanada PipeLines Limited EO-2-75	4,000	N/A	—	—	3	—	—	—	3	40	N/A
Gross Imports			1,698,855	338,367	323,118	329,130	313,746	315,110	3,318,326		
Deduct Imports for Re-Exports:											
Item 9, GLI-5(c)			31,274	19,663	15,769	14,654	13,847	13,445	108,652		
Item 23, EO-1-72			121	—	—	—	—	—	121		
Item 24, EO-4-72			19	—	—	—	—	—	19		
Item 25, EO-1-74			—	79	—	—	—	—	79		
Item 26, EO-2-74			—	66	—	—	—	—	66		
Item 27, EO-1-75			—	—	208	—	—	—	208		
Item 28, EO-2-75			—	—	3	—	—	—	3		
Deduct Re-Imports of Exports:											
Item 10, GL-21 (d)			1,080,971	214,392	209,350	218,499	210,541	212,305	2,146,057		
Item 11, GL-30(e)			30,931	11,114	9,654	10,605	10,969	10,280	83,553		
Item 12, GL-42(d)			185,050	79,791	77,914	81,320	78,358	79,014	581,447		
Item 15, EO-2-63			56	—	—	—	—	—	56		
Net Imports			370,434	13,262	10,219	4,052	31	66	398,063		

(a) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.

(b) Converted from "wet base" to "dry base" for purpose of comparability.

(c) The quantities of gas authorized for import by this licence near Willow Creek, Saskatchewan, are authorized to be exported at Emerson, Manitoba pursuant to Licence GL-44.

(d) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie, Ontario, to serve the Eastern Canadian market.

(e) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

Figures may not total due to rounding.

N/S Not specified.

N/A Not applicable.

APPENDIX G-IX

EXPORTS OF PROPANE, BUTANE, ETHANE & ETHYLENE UNDER LONG TERM LICENCES AND ORDERS* — 1978

(Volume in Barrels)

Exporter	Licence or Order Number	Period		Authorized Maximum Export Quantity in Period		Actual Export in 1978	
		From	To	Gross	Net	Gross	Net
A. PROPANE							
1. Dome Petroleum Limited	GL-31(AO-4)	01/01/78	31/12/78	5,457,000	4,692,000	4,068,419(a)	4,692,000(b)
2. Amoco Canada Petroleum Company Limited	GL-32(AO-2)	01/01/78	31/12/78	3,197,500	584,000	3,197,500	584,000
3. PanCanadian Gas Products Ltd.	GL-34(AO-3)	01/01/78	31/12/78	2,259,500	401,500	1,610,934	86,160
4. Dome Petroleum Limited	GL-46(AO-2)	01/04/78	31/03/79	N/A	3,900,000	N/A	2,474,116
5. Imperial Oil Limited	EPR-904-75	01/01/78	31/03/78	N/A	1,193,500	N/A	631,541
6. Dome Petroleum Limited	EPR-908-77	01/01/78	31/12/78	N/A	1,500,000	N/A	1,500,000
7. Amoco Canada Petroleum Company Limited	EPR-911-77	01/01/78	30/04/78	N/A	215,000	N/A	215,000
8. Imperial Oil Limited	EPR-913-78	01/04/78	31/12/78	N/A	2,733,500	N/A	1,812,707
9. Amoco Canada Petroleum Company Limited	EPR-914-78	17/11/78	31/12/78	N/A	1,753,830	N/A	493,369
B. BUTANE							
1. Dome Petroleum Limited	EBU-1-74(AO-1)	01/04/78	31/03/79	N/A	4,990,000	N/A	2,125,343
2. Dome Petroleum Limited	EBU-132-74	01/01/78	31/12/78	N/A	4,001,400	N/A	2,661,765
3. Amoco Canada Petroleum Company Limited	EBU-133-74	01/01/78	31/12/78	N/A	4,153,900	N/A	1,984,859
4. PanCanadian Gas Products Ltd.	EBU-134-74	01/01/78	31/12/78	N/A	1,346,400	N/A	927,147
5. Imperial Oil Limited	EBU-905-75	01/01/78	15/04/78	N/A	716,000	N/A	454,599
6. Imperial Oil Limited	EBU-906-78	01/04/78	31/12/78	N/A	1,640,000	N/A	1,267,425
C. ETHANE							
1. Dome Petroleum Limited	GL-45(AO-3)	01/04/78	31/03/79	N/A	3,357,000	N/A	2,157,244
2. Dome Petroleum Limited	GL-47(AO-3)	15/08/78	31/12/78	N/A	5,287,500	N/A	4,772,845
3. Dome Petroleum Limited	GO-1-78	01/07/78	30/09/78	N/A	60,000	N/A	7,840
D. ETHYLENE							
1. Imperial Oil Limited	EYL-1-78(AO-2)	01/05/78	30/04/79	N/A	42,700	N/A	25,368

*See Appendix G-IV for full licence particulars.

(a)Gross exports included only volumes exported at Gretna and Elmore.

(b)Includes total volumes exported by Dome Petroleum Limited.

APPENDIX G-X

IMPORTS OF PROPANE, BUTANE AND ETHANE UNDER LONG TERM LICENCES AND ORDERS* — 1978

(Volume in Barrels)

Importer	Licence or Order Number	Period		Authorized Maximum Import Quantity In Period	Actual Import in 1978
		From	To		
A. PROPANE					
1. Dome Petroleum Limited	GL-31(AO-4)	01/01/78	31/12/78	5,457,000	3,596,514
2. Amoco Canada Petroleum Company Limited	GL-32(AO-2)	01/01/78	31/12/78	3,197,500	3,197,500
3. PanCanadian Gas Products Ltd.	GL-34(AO-3)	01/01/78	31/12/78	2,259,500	1,584,909
4. Dome Petroleum Limited	GL-46(AO-2)	01/04/78	31/03/79	3,900,000	2,437,578
5. Imperial Oil Limited	EPR-904-75	01/01/78	31/03/78	1,193,500	631,541
6. Dome Petroleum Limited	EPR-908-77	01/01/78	31/12/78	1,500,000	1,500,000
7. Amoco Canada Petroleum Company Limited	EPR-911-77	01/01/78	30/04/78	215,000	215,000
8. Imperial Oil Limited	EPR-913-78	01/04/78	31/12/78	2,733,500	1,812,707
9. Amoco Canada Petroleum Company Limited	EPR-914-78	17/11/78	31/01/79	1,753,830	290,463
B. BUTANE					
1. Dome Petroleum Limited	EBU-1-74(AO-1)	01/04/78	31/03/79	4,990,000	2,058,988
2. Dome Petroleum Limited	EBU-132-74	01/01/78	31/12/78	4,001,400	2,661,765
3. Amoco Canada Petroleum Company Limited	EBU-133-74	01/01/78	31/12/78	4,153,900	1,867,203
4. PanCanadian Gas Products Ltd.	EBU-134-74	01/01/78	31/12/78	1,346,400	917,791
5. Imperial Oil Limited	EBU-905-75	01/01/78	15/04/78	716,000	454,599
6. Imperial Oil Limited	EBU-906-78	01/04/78	31/12/78	1,640,000	1,267,425
C. ETHANE					
1. Dome Petroleum Limited	GL-45(AO-3)	01/04/78	31/03/79	3,357,000	2,179,954
2. Dome Petroleum Limited	GL-47(AO-3)	15/08/78	31/12/78	5,287,500	4,158,355

*See Appendix G-VII for full licence particulars.

APPENDIX G-XI

NET EXPORTS OF PROPANE AND BUTANE

A) PROPANE (Volume in barrels)

Exporters	1976	1977 (revised)	1978
Amoco Canada Petroleum Co. Ltd	2,943,924	3,084,727	2,929,646
Big Horn Canada Petroleum Co. Ltd	19,204	125,838	183,914
Burnwell Gas of Canada Ltd	71,206	124,601	99,221
Canadian Enterprise Gas Products Ltd	535,989	683,874	445,458
Canadian Propane Gas & Oil Ltd	58,569	47,873	36,591
Canadian Superior Oil Ltd	594,811	620,054	459,050
Canmore Mines Ltd	300,938	332,378	357,956
Chevron Standard Ltd	1,172,618	1,516,994	1,120,105
Cigas Products Ltd	271,903	537,601	141,065
Columbia Gas Development of Canada Ltd	650,055	286,881	—
C.W. Gas Ltd	—	—	78
Dome Petroleum Ltd	5,858,728	8,820,619	6,712,337
Dow Chemical of Canada Ltd	298,305	—	—
Elgin Petroleum Ltd	41,458	92,330	17,072
Esso Resources Canada Ltd	1,106,132	1,975,009	1,224,281
Gasbec Inc.	308,266	407,962	222,478
Gas Supply (Minneapolis) Ltd	20,993	11,172	148,886
Gavan Petroleums Ltd	66,476	13,544	—
Goliad Oil & Gas Co. & Goliad Ltd	356,568	59,093	—
Gulf Oil Canada Ltd	3,121,641	3,045,182	2,771,140
Home Oil Co. Ltd	543,164	671,170	440,203
Hudson's Bay Oil & Gas Co. Ltd	409,673	429,802	415,430
Irving Oil Ltd	8,943	14,433	2,966
Koch Oil Co. Ltd	78,337	289,045	99,521
M-P Petroleum Ltd	159,351	134,288	89,834
Mobil Oil Canada Ltd	490,947	779,874	484,590
N.G.L. Supply Ltd	383,576	562,614	187,081
Northern Petro Products Ltd	116,876	333,345	26,182
Northwest LPG Supply Ltd	104,943	16,831	—
Pacific Petroleums Ltd	1,508,221	1,477,225	1,155,509
PanCanadian Gas Products Ltd	329,993	709,963	883,459
Petrosol International Ltd	34,283	115,145	—
Real Marketing Ltd	16,936	4,307	1,350
Shaban Manufacturing Ltd	370	1	—
Shell Canada Ltd	94,153	280,703	397,132
Stillings Canada Petroleum Company	2,047,798	1,773,263	678,686
Sunoco Inc.	—	29,937	—
Texaco Canada Inc.	282,675	125,693	—
Union Oil Co. of Canada Ltd	200,763	202,393	143,014
Union Texas of Canada Ltd	463,160	445,535	384,281
Weskem of Canada Ltd	44,651	54,531	—
TOTALS	25,116,597	30,235,830	22,332,197

APPENDIX G-XI (Cont'd)

NET EXPORTS OF PROPANE AND BUTANE

B) BUTANE (Volume in barrels)

Exporters	1976	1977 (revised)	1978
Amoco Canada Petroleum Co. Ltd	2,294,495	2,300,996	2,085,798
Belgo Canada Manufacturing Co. Ltd	11	—	—
Big Horn Supply Ltd	15,695	25,786	69,313
Canadian Enterprise Gas Products Ltd	338,024	288,603	145,425
Canadian Propane Gas & Oil Ltd	170	—	—
Canadian Superior Oil Ltd	356,393	66,682	168,956
Canmore Mines Ltd	—	115,689	55,287
Chevron Standard Ltd	137,883	128,234	27,795
Cigas Products Ltd	483,903	162,570	121,943
Columbia Gas Development of Canada Ltd	54,905	180,122	—
Dome Petroleum Ltd	3,172,496	3,343,810	3,391,266
Elgin Petroleum Ltd	—	—	6,782
Esso Resources Canada Ltd	673,734	577,740	240,276
Gas Supply (Minneapolis) Ltd	13,849	—	—
Gavan Petroleums Ltd	19,225	—	—
Goliad Oil & Gas Co. & Goliad Ltd	329,117	53,056	—
Home Oil Co. Ltd	305,090	160,688	454,748
Hudson's Bay Oil & Gas Co. Ltd	1,709,502	1,946,849	1,700,409
Husky Oil Operations Ltd	225,256	265,822	138,184
Koch Oil Co. Ltd	1,599,525	1,385,119	1,003,570
M-P Petroleum Ltd	80,615	77,032	87,021
Mobil Oil Canada Ltd	1,137,636	695,928	544,628
Murphy Oil Co. Ltd	90,952	60,539	45,165
N.G.L. Supply Ltd	26,289	70,027	175,360
Northern Petro Products Ltd	22,847	13,130	—
Pacific Petroleums Ltd	740,289	650,026	464,798
PanCanadian Gas Products Ltd	181,265	293,911	449,243
Petrosol International Ltd	87,608	381,413	278,375
Shell Canada Ltd	1,850,729	1,241,082	1,105,006
Stillings Canada Petroleum Company	419,432	841,457	419,057
Sunoco Inc.	—	25,000	295,866
Texaco Canada Inc.	684,243	442,096	447,391
TOTALS	17,051,178	15,793,407	13,922,538

APPENDIX O-I

CERTIFICATES OF PUBLIC CONVENIENCE & NECESSITY FOR OIL PIPELINES ISSUED DURING 1978

Applicant	Facilities	Estimated Cost	Heard	Issued	Cert. No.
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NO CERTIFICATES ISSUED 1978

APPENDIX O-II

ORDERS RELATING TO NEW OIL PIPELINE FACILITIES ISSUED DURING 1978 CLASS B CONSTRUCTION

Applicant	Facilities	Estimated Cost	Issued	Order No.
Manito Pipelines Ltd.	Additional pipeline being (A) one 40 horsepower electric motor-driven centrifugal 'blend' booster pumping unit, and one 10 horsepower electric motor-driven centrifugal 'condensate' pumping unit together with all appurtenances and works connected therewith at its existing 'Lone Rock Pump Station' site (B) one 400 horsepower electric motor-driven positive displacement pumping unit, together with all appurtenances and works connected therewith, as well as certain incidental facilities, at its existing 'Unity Pump Station' site, and (C) certain modifications to two existing centrifugal 'condensate' pumping units, as well as two 40 horsepower electric motors, together with all appurtenances and works connected therewith, at its existing 'Kerobert Pump Station' site all in the Province of Saskatchewan	\$ 410,000	16 May 1978	XO-1-78
Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd.	Approximately 5.2 miles of 6.625-inch outside diameter line of pipe, together with all appurtenances and works connected therewith, in the Province of Ontario	595,000	11 July 1978	XO-2-78
Interprovincial PipeLine Limited	Additional pipeline being two 390,000 Barrel Tanks at its existing "Sarnia Pump Station and Terminal"	4,800,000	21 Dec. 1978	XO-3-78

CLASS C CONSTRUCTION

Applicant	Facilities	Estimated Cost	Issued	Order No.
Wascana Pipe Line Ltd.	Certain facilities to be added to its pipeline in the Province of Saskatchewan	\$ 127,000	18 Jan 1978	XOM-1-78 (as amended)
Montreal Pipeline Company Limited	Certain facilities to be added to its pipeline in the Province of Québec	27,100	19 April 1978	XOM-2-78
Yukon Pipelines Limited	Certain modifications to be made to its pipeline in the Province of British Columbia and in the Yukon Territory	55,000	19 April 1978	XOM-3-78
Trans Mountain Pipe Line Company Ltd.	Certain facilities to be added to its pipeline in the Provinces of British Columbia and Alberta	1,102,310	19 April 1978	XOM-4-78
Petroleum Transmission Company	Certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan and Manitoba	15,000	12 May 1978	XOM-5-78
Trans-Northern Pipe Line Company	Certain facilities to be added to its pipeline in the Provinces of Québec and Ontario	801,000	12 May 1978	XOM-6-78
Manito Pipelines Ltd.	Certain facilities to be added to its pipeline in the Provinces of Alberta and Saskatchewan	110,500	25 May 1978	XOM-7-78
Interprovincial Pipe Line Limited	Certain facilities to be added to its pipeline in the Provinces of Alberta, Saskatchewan, Manitoba, Ontario and Québec	6,729,710	9 June 1978	XOM-8-78
Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd.	Certain facilities to be added to its pipeline in the Province of Ontario	133,100	17 Oct 1978	XOM-9-78

APPENDIX O-III

EXPORTS OF CANADIAN CRUDE OIL AND EQUIVALENT TO THE UNITED STATES 1978 AND 1977

Company	Destination	1978		1977	
		Total Barrels for Year	Daily Average	Total Barrels for Year	Daily Average
Districts I - IV					
Amoco Oil Company	Whiting, Indiana	—	—	379,983	1,041
Amoco Oil Company	Wood River, Illinois	—	—	49,077	134
Ashland Oil Inc.	N. Tonawanda, New York	983,229	2,694	454,981	1,247
Ashland Oil Inc.	Findlay, Ohio	2,443,235	6,694	1,902,554	5,213
Ashland Oil Inc.	St. Paul, Minnesota	5,648,575	15,476	15,269,258	41,834
Bay Refining Company	Bay City, Michigan	—	—	332,947	912
Canadian Hydrocarbons Ltd.	Cut Bank & Kevin, Montana	8,130	22	214,040	587
Cliffs Fuel Service Co.	Rapid River, Michigan	91,965	252	98,556	270
Continental Oil Company	Billings, Montana	5,459,627	14,958	9,894,287	27,108
Continental Oil Company	Wrenshall, Minnesota	2,920,127	8,000	5,477,333	15,006
Consumers Power Company	Bay City, Michigan	522,359	1,431	1,767,435	4,842
Consumers Power Company	Marysville, Michigan	1,092,722	2,994	7,723,030	21,159
Exxon Corp.	Baton Rouge, Louisiana	—	—	106	—
Exxon Corp.	Billings, Montana	2,793,805	7,654	5,294,058	14,504
Farmers Union Central Exchange	Laurel, Montana	2,360,208	6,466	4,464,766	12,232
Koch Refining Co.	Pine Bend, Minnesota	26,868,706	73,613	27,553,621	75,489
Lake Superior District Power	Ashland, Wisconsin	—	—	37,662	103
Laketon Asphalt Refining Inc.	Laketon, Indiana	—	—	154,055	422
Mobil Oil Corp.	Joliet, Illinois	4,317,746	11,829	5,100,762	13,975
Murphy Oil Corporation	Superior, Wisconsin	6,252,799	17,131	9,543,234	26,146
Standard Oil Company (Ohio)	Toledo, Ohio	1,065,835	2,920	1,996,156	5,469
Sun Oil Company Ltd.	Toledo, Ohio	—	—	194,404	533
Texas American Petrochemical, Inc.(1)	West Branch, Michigan	—	—	76,989	211
Total Petroleum Inc.	Alma, Michigan	421,828	1,156	652,244	1,787
Union Oil Co. of California	Lemont, Illinois	163,232	447	—	—
United Refining Co.	Warren, Pennsylvania	127,576	350	340,329	932
Other		1,505	4	103	—
Total Districts I - IV		63,543,209	174,091	98,971,970	271,156
District V					
Mobil Oil Corp.	Ferndale, Washington	—	—	125,396	344
Shell Oil Company	Anacortes, Washington	—	—	165,314	453
Total District V		—	—	290,710	797
Total U.S.A.		63,543,209	174,091	99,262,680	271,953

(1) Purchased from United Refining Co. in 1977.

APPENDIX O-IV

LICENCES ISSUED FOR EXPORTS OF CRUDE OIL AND CONDENSATE TO U.S. 1978

Exporter	Barrels	
	Crude	Condensate
Ashland Oil Canada Ltd.	8,263,401	678,149
Dome Petroleum Ltd.		1,704,829
Great Canadian Oil Sands Ltd.	1,479	
Hudson's Bay Oil and Gas Company Ltd.	6,342,605	4,256,262
Husky Oil Operations Ltd.	525,991	
Imperial Oil Ltd.	3,065,538	831,712
Koch Oil Company Ltd.	26,591,814	
Mobil Oil Canada Ltd.	4,280,782	
Murphy Oil Company Ltd.	5,740,973	681,048
Petro Canada	19	
Sunoco Inc.	9	
Union Oil Company of Canada Ltd.	454,326	
Total Licences Issued in 1978	55,266,937	8,152,000

APPENDIX O-V

EXPORT CHARGES IN 1978 FOR CRUDE OIL AND REFINED PETROLEUM PRODUCTS (\$ PER BARREL)

1978	January ⁽¹⁾	February	March	April	May	June	July ⁽¹⁾	August	September	October	November	December
Light & Medium Crude Oil	5.85	4.85	4.85	4.85	5.35	5.10	5.10	4.10	4.10	4.90	5.40	5.40
Designated Heavy Crude Oils	4.25	3.25	3.25	3.25	3.75	4.00	4.00	3.00	3.00	3.80	4.20	4.20
Lloydminster Type Blends	3.80	2.80	2.80	2.80	3.30	3.55	3.55	2.55	2.55	3.35	3.75	3.75
Condensate	5.85	4.85	4.85	4.85	5.35	5.10	5.10	4.10	4.10	4.90	5.40	5.40
Motor Gasoline	3.60	3.60	3.10	3.10	3.35	3.85	4.00	4.50	4.50	4.50	4.75	4.75
Middle Distillates	3.60	3.60	3.10	3.10	3.10	3.10	3.00	3.00	2.50	2.50	3.00	3.00
Heavy Fuel Oil	3.60	2.45	2.95	3.45	3.45	3.10	3.00	1.50	1.70	1.70	2.20	2.20
Partially Processed Oil	5.85	4.85	4.85	4.85	5.35	5.10	5.00	4.00	4.00	4.80	5.30	5.30

(1) Reduction of \$1.00 per barrel applicable in respect of volumes of crude oil and equivalent exported in January and July which entered exporting pipeline systems after January 1, 1978, and July 1, 1978 respectively.

APPENDIX O-VI

EXPORTS OF LICENCED PETROLEUM PRODUCTS — 1978 (BARRELS)

Month	Partially Processed Oil	Motor Gasoline	Heavy Fuel Oil	Middle Distillate	Total
January	197,642	173,117	1,666,273	38,293	2,075,325
February	513,514	2,444	1,528,381	451,321	2,495,660
March	325,306	49,997	1,304,889	619,320	2,299,512
April	324,746	534,812	1,694,315	496,957	3,050,830
May	391,856	1,125,266	2,053,103	1,493,191	5,063,416
June	193,804	764,200	2,687,059	463,467	4,108,530
July	268,426	975,764	2,765,309	1,196,544	5,206,043
August	441,997	444,181	1,560,634	798,017	3,244,829
September	389,200	387,339	2,030,903	799,557	3,606,999
October	256,685	301,627	1,648,130	1,235,618	3,442,060
November	188,788	410,547	1,313,152	2,479,337	4,391,824
December	381,003	938,161	1,316,050	1,600,356	4,235,570
Total	3,872,967	6,107,455	21,568,198	11,671,978	43,220,598

APPENDIX O-VII

EXCHANGES OF CRUDE OIL AND EQUIVALENT WITH THE U.S. 1978

Licence Holder	Exchange Partner	Quantity in Barrels		
		Licensed	Exported	Imported
BP Oil Ltd.	Continental Oil Co.	1,027,300	1,031,450	1,133,171
BP Oil Ltd.	Mobil Oil Corp.	2,751,000	2,724,191	2,570,760
BP Oil Ltd.	Murphy Oil Corp.	3,536,000	3,453,073	3,394,327
BP Oil Ltd.	Phillips Petroleum Co.	786,050	547,884	542,445
Consumers' Co-operative Refineries Ltd.	Continental Oil Co.	1,450,200	1,378,203	1,325,526
Gulf Canada Ltd.	Ashland Petroleum Co.	1,194,200	1,193,660	1,089,583
Gulf Canada Ltd.	Continental Oil Co.	2,516,550	2,553,038	2,565,214
Gulf Canada Ltd.	Murphy Oil Corp.	1,095,000	1,098,089	1,099,754
Imperial Oil Ltd.	Exxon Corp.	668,000	657,003	665,834
Shell Canada Ltd.	Amoco Oil Co.	1,115,505	1,107,432	1,094,509
Shell Canada Ltd.	Continental Oil Co.	2,279,865	2,137,546	2,137,507
Shell Canada Ltd.	Farmers Union Central Exchange	4,753,600	4,710,200	4,763,771
Shell Canada Ltd.	Shell Oil Co.	5,440,200	5,434,400	5,431,526
Shell Canada Ltd.	Thunderbird Resources	218,480	218,183	220,433
Sunoco Inc.	Continental Oil Co.	1,825,000	1,836,760	1,839,636
Sunoco Inc.	Sun Oil Co. of Pennsylvania	2,929,000	2,788,982	2,767,689
Texaco Canada Inc.	Exxon Corp.	1,009,000	1,016,908	1,011,929
	TOTAL	34,594,950	33,887,002	33,653,614

APPENDIX E-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR INTERNATIONAL POWER LINES PURSUANT TO SECTION 44 ISSUED DURING 1978

Applicant	Facilities	Estimated Cost	Application Heard	Issued	Certificate No.
1. The New Brunswick Electric Power Commission	To uprate the existing single-circuit international power line, between Beechwood and the international border, from 69 kV to 138 kV and to extend the circuit by 0.85 km for connection at Beechwood station. The total length in Canada would be 12.8 km. The line would be known as 'Beechwood-Flo's Inn 138 kV Interconnection'.	\$384,000	1-2 November 1977	17 February 1978	EC-III-18

APPENDIX E-II

ORDERS RELATING TO INTERNATIONAL POWER LINES ISSUED DURING 1978

Type of Order	Applicant	Facilities	Issued	Order No.
Amending Order to Certificates of Public Convenience and Necessity Pursuant to Section 3 of the International Power Line Regulations.	1. The Manitoba Hydro-Electric Board	Amending Order to Certificate No. EC-III-16 approving changes in the routing of the international power line.	12 January 1978	AO-1-EC-III-16
Exemption Orders pursuant to Section 40, 41 and 43.	1. Quebec Hydro-Electric Commission.	Twelve international power lines extending from the distribution circuit in Estcourt, Temiscouata County in the province of Quebec, to the international boundary line near Estcourt. These single-phase lines operate at 120/240 V.	10 August 1978	XE-1-78
	2. Quebec Hydro-Electric Commission	Twelve international power lines extending from the distribution circuit in Saint-Pamphile, l'Islet County in the province of Quebec, to the international boundary line near Saint-Pamphile. These single-phase lines operate at 120/240 V.	10 August 1978	XE-2-78
	3. Quebec Hydro-Electric Commission	Two international power lines extending from the distribution circuit in Saint-Zacharie, Dorchester County, in the province of Quebec, to the international boundary line near Saint-Zacharie. These single-phase lines operate at 120/240 V.	10 August 1978	XE-3-78

APPENDIX E-III

LICENCES TO EXPORT ELECTRIC POWER AND ENERGY PURSUANT TO SECTION 82 ISSUED DURING 1978

Applicant	Class	Megawatts	Annual Gigawatt- hours	Term		Application Heard	Issued	Licence No.
				From	To			
1. The New Brunswick Electric Power Commission	Short-term firm	20	140	01/03/78	31/10/82	1-2 November 1977	21 December 1977*	EL-108
2. The New Brunswick Electric Power Commission	Interruptible		300	01/03/78	31/10/82	1-2 November 1977	22 December 1977*	EL-109
3. The New Brunswick Electric Power Commission	Carrier transfer	50	250	01/03/78	31/10/82	1-2 November 1977	22 December 1977*	EL-110
4. The New Brunswick Electric Power Commission	Short-term firm	20	140	01/03/78	31/10/82	1-2 November 1977	22 December 1977*	EL-111
5. The New Brunswick Electric Power Commission	Interruptible		179	01/03/78	31/10/82	1-2 November 1977	22 December 1977*	EL-112
6. Quebec Hydro-Electric Commission	Interruptible		10,200	06/09/78	31/12/83	6-7 June 1978	27 July 1978	EL-113

*Approved by Order in Council in 1978

APPENDIX E-IV

ORDERS RELATING TO EXPORT OF ELECTRIC POWER AND ENERGY ISSUED DURING 1978

ORDERS ISSUED PURSUANT TO SECTION 6A OF THE REGULATIONS UNDER PART VI OF THE ACT

Applicant	Class	Kilowatts	Annual Kilowatt- hours	Term		Issued	Order No.
				From	To		
1. Quebec Hydro-Electric Commission	Firm	240	480,000	01/08/78	31/07/81	10 August 1978	ELO-132
2. Quebec Hydro-Electric Commission	Firm	240	480,000	01/08/78	31/07/81	10 August 1978	ELO-133
3. Quebec Hydro-Electric Commission	Firm	40	80,000	01/08/78	31/07/81	10 August 1978	ELO-134
4. West Kootenay Power and Light Company	Firm	20	50,000	01/01/79	31/12/82	9 November 1978	ELO-135

AMENDING ORDERS ISSUED RELATIVE TO ELECTRIC POWER AND ENERGY

Applicant	Associated Licence	Issued	Order No.
1. The Manitoba Hydro-Electric Board	EL-90	26 October 1978	AO-1-EL-90
2. The Manitoba Hydro-Electric Board	EL-91	30 March 1978	AO-1-EL-91
3. Quebec Hydro-Electric Commission	EL-96	26 April 1978	AO-1-EL-96
4. Quebec Hydro-Electric Commission	EL-78	25 May 1978	AO-2-EL-78
5. Ontario Hydro	ELO-122	13 April 1978	AO-2-ELO-122

APPENDIX E-V

EXPORTS OF ELECTRIC ENERGY — CALENDAR YEAR 1978

Exporter	Licence Number	Thousands of Kilowatthours					Reported Dollar Value of Export	
		Licence Authorization		Gross Energy Exported			Firm	Interruptible
		Firm	Interruptible	Firm	Interruptible	Exchange(1)		
1. Maine and New Brunswick Electrical Power Company, Limited	EL-22 EL-23	250,000	25,000	87,706			\$ 826,463	\$
2. Fraser Companies, Limited	EL-79 EL-80	400,000	30,000	278,420			6,054,513	
3. The New Brunswick Electric Power Commission	EL-64 EL-65 AO-4-EL-66 EL-68 EL-70 EL-71 EL-108 EL-109 EL-110 EL-111 EL-112 ELO-125 to ELO-127	3,504,000 876,000 100,000 300,000 150,000 163,812 140,000 300,000 50,000 140,000 179,000 300	876,000 150,000 163,812 140,000 300,000 50,000 140,000 179,000	1,890,377 169,073 8,499 1,467 — 104,003 — 12,027 225	-378,742 459 362,085 —21 437 1,175 — -586 13,439 — -520		62,624,733 3,175,506 232,736 36,095 — 3,111,099 247,153 9,743	
Total New Brunswick				2,256,728	295,069	-2,274	69,515,452	6,802,589
4. Cedars Rapids Transmission Company Limited	ELO-129		20,000		—			—
5. Hydro-Quebec	EL-18 EL-96 EL-113 EL-106 EL-107 ELO-131 ELO-114 to ELO-121 ELO-132 to ELO-134	3,000,000 13,288 144,500 5,930 582 1,040	1,530,000 10,200,000 5,575 81,685 6,684 341 —	585,401 390,620 5,575 81,685 6,684 341 —	317,194 390,620 — — — — —	8,500 7,228 —14 — — — —	3,455,622 156,932 1,509,863 177,141 7,816 —	5,009,104 5,936,909 —
6. Southern Canada Power Company Limited	AO-10-EL-30		74,250		14,573			247,739
Total Quebec				679,686	722,387	15,714	5,307,374	11,193,752
7. Ontario Hydro	EL-32 EL-94 EL-95 ELO-122	15,000 80	8,000,000 15,000,000	957 66(2)	10,364,154	109,884 21,644	1,913 1,754(2)	284,177,962
8. Canadian Niagara Power Company Limited	EL-83 EL-84	260,000	200,000	123,199	18,045	14,017	1,759,176	220,144
9. The Ontario-Minnesota Pulp and Paper Company Limited	EL-62 EL-63	280,300	87,600	231,961	—	—	4,683,206	—
10. The Detroit and Windsor Subway Company	ELO-128	1,000		922			—	
11. The Canadian Transit Company	ELO-123	25		24			—	
12. St. Lawrence Power Company	AO-1-EL-77		250,000		114,652	92,118		1,398,754
Total Ontario				357,129	10,496,851	17,895	6,446,049	285,796,860
13. Manitoba Hydro	EL-90 EL-91 EL-92 EL-93 ELO-130	822,000 1,200,000 300,000 15	4,000,000	676,693 — — 11	2,393,357	-12,790	13,015,103 — — 405	34,632,336
Total Manitoba				676,704	2,393,357	-12,790	13,015,508	34,632,336
14. British Columbia Hydro and Power Authority	EL-85 EL-86 EL-87 EL-88 EL-89 ELO-124	25,000 1,000,000 800,000 2,000,000 600	3,600,000	10,534 211	1,665,769	482,396 515,922	242,921 14,942	30,098,999
15. Cominco Ltd.	EL-20 EL-104 EL-105	50,000	500,000 1,400,000	—	987,198	43,723	—	15,486,234
16. West Kootenay Power and Light Company	ELO-113	50		27			658	
Total British Columbia				10,772	2,652,967	1,042,041	258,521	45,585,233
Total Canada				3,981,019	16,560,631	1,060,586	94,542,904	384,010,770

(1) Exchange is no value energy. It includes inadvertent and circulating flows, equichange, storage, adjustment transfers and wheeling or carrier transfer.

(2) Includes 1977 and 1978 data.

APPENDIX E-VI

TOTAL CANADIAN ELECTRIC ENERGY SUPPLY AND TRADE WITH THE UNITED STATES — CALENDAR YEAR 1978

Category	(Millions of Kilowatthours)
Electric Energy Generation for all Canada	335,700 (preliminary)
Electric Energy Importation from U.S.A.	2,092 (preliminary)
Total Canadian Electric Energy Supply	337,792 (preliminary)
Electric Energy Export (Gross) to U.S.A.	3,981 (firm) — 1.2% of Canadian Supply
	16,561 (interruptible) — 4.9% of Canadian Supply
	1,061 (exchange) — 0.3% of Canadian Supply

APPENDIX S-I

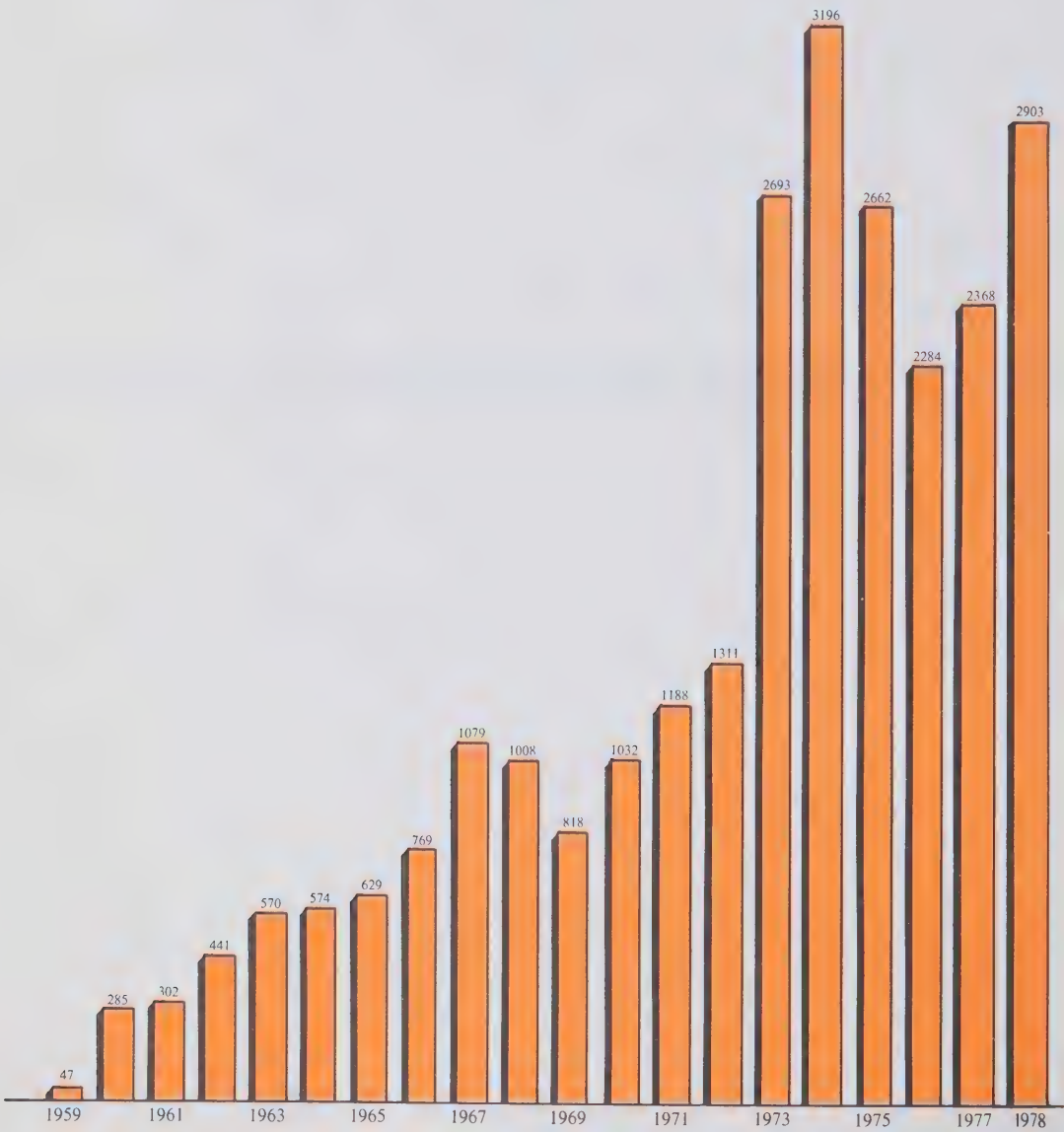
PIPELINE LEAKS, BREAKS AND MALFUNCTIONS 1978

Origin of Reported Incidents	Number of Incidents
Internal and external corrosion of pipe and equipment	8
Defective Mill Welds	0
Defective Field Welds	9
Pipe Material Defects	0
Defective Equipment and Piping	7
Damage during Construction by others	3
Miscellaneous	8
TOTAL	35

APPENDIX S-II

TOTAL NUMBER OF BOARD CERTIFICATES, LICENCES, PERMITS, ORDERS AND AUTHORIZATIONS BETWEEN 1959 AND 1978

The National Energy Board Act was proclaimed on November 2, 1959



A1
MT 76
- A55

NATIONAL ENERGY BOARD

ANNUAL REPORT 1979



20 Twentieth
Anniversary

31 March 1980

The Honourable Marc Lalonde, P.C.,
Minister of Energy, Mines and Resources,
Ottawa, Ontario.

Dear Sir:

In accordance with the provisions of Section 91 of the National Energy Board Act, the Revised Statutes of Canada, 1970, chapter N-6, I am pleased to submit the Annual Report of the National Energy Board for the year ended 31 December 1979.

Yours sincerely,

A handwritten signature in dark ink, appearing to read "J. G. Stabback". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

J.G. Stabback,
Chairman.

Photo: Shell Canada Limited

Ce rapport annuel est publié séparément dans les deux langues officielles. Des copies en langue française pourront être obtenues du bureau de la division du secrétariat de l'Office national de l'énergie.

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NOTE ON METRIC CONVERSION

Effective 1 January 1979, the National Energy Board converted to the International System of Units (SI), and accordingly, the data presented in this 1979 Annual Report reflect this change. The following table serves to illustrate the conversion factors and some of the metric terms employed by the Board in this Report.

1 barrel of oil @ 60°F	= 0.158 987 3 m ³ @ 15°C correcting factor for API gravity	1 barrel of propane (equilibrium pressure and 60°F)	= 0.158 73 m ³ (equilibrium pressure and 15°C)
1 cubic foot of natural gas (@ 14.73 psia and 60°F)	= 0.028 327 84 m ³ (@ 101.325 kPa and 15°C)	1 barrel of butane (equilibrium pressure and 60°F)	= 0.158 81 m ³ (equilibrium pressure and 15°C)
1 cubic metre of oil	= 6.3 barrels	1 barrel of ethane (equilibrium pressure and 60°F)	= 0.157 976 m ³ (equilibrium pressure and 15°C)
1 cubic metre of natural gas	= 35.301 cubic feet (@ 14.73 psia and 60°F)	1 pound (eg: ethylene)	= 0.453 592 4 kg
1 cubic foot of natural gas (@ 14.73 psia and 60°F)	= 0.037 887 67 MJ/m ³ dry (@ 101.325 kPa and 15°C)	1 mile	= 1.609 344 km
		1 inch	= 25.4 mm
1 Btu 60/61	= 1 054.615 joules GJ = gigajoule = 10 ⁹ J TJ = terajoule = 10 ¹² J PJ = petajoule = 10 ¹⁵ J EJ = exajoule = 10 ¹⁸ J	1 foot	= .304 8 m
		1 gallon of oil	= 4.546 09 litres x correcting factor for API gravity (L @ 15°C)

THE FUNCTIONS AND RESPONSIBILITIES OF THE NATIONAL ENERGY BOARD

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal responsibilities: to regulate specific areas of the oil, gas and electrical utility industries in the public interest, and to advise the Government on the development and use of energy resources.

The Board on its own initiative may hold inquiries into a particular aspect of the energy situation and prepare reports for the information of the Government, of Parliament and of the general public.

The Board also carries out studies and prepares reports at the request of the Minister.

The regulatory role of the Board encompasses the following fields:

Certificates of Public Convenience and Necessity

The Board grants certificates to construct or operate interprovincial and international oil, gas and petroleum products pipelines, and international electric power lines. Before permission is granted for construction, through a certificate of public convenience and necessity, the Board considers the application at a public hearing.

Board Orders

The Board may issue orders approving additions or modifications to existing pipeline systems without calling a public hearing. Such additions and modifications would include sections, branches and extensions of pipeline not more than 40 km in length, and ancillary installations such as tanks, pumps, compressors, meter stations, and communications systems. The Board may also by order authorize international power lines of transfer capacity not exceeding 5,000 kilowatts (kW).

Pipeline Utility Crossings

For reasons of safety, the protection of the environment and of other utility services, no pipeline may cross or be crossed by another utility without authorization. Where a pipeline is to cross a navigable water or a railway, leave must be obtained from the Minister of Transport or the Canadian Transport Commission respectively. Crossings of the facilities of

other utilities may only be made with the authorization of the Board. Authorization is made by Board order after consideration of all the relevant information.

Pipeline Safety

The Board's Oil and Gas Pipeline Regulations seek to provide for the safe design, construction and operation of pipelines under Board jurisdiction. Commencing with the design stage, applications for pipeline construction are reviewed to ensure compliance with the regulations. Pipeline companies are required to have contingency plans developed in co-ordination with local authorities to provide for the safety of the public in the event of line breaks during testing or operation. To ensure high standards in the safety of pipeline construction and operation, the Board carries out inspection programs and conducts investigations and reviews of pipeline system performance.

Environmental Protection

The environmental information requirements for new oil and gas pipelines and for modifications or extensions to existing systems and for international power lines are set forth in the Board's Rules of Practice and Procedure. The Board's assessment of environmental impact takes into consideration diverse concerns such as impact on permafrost soils, erosion and siltation at water crossings of pipelines, impact on wildlife, preservation of archaeological and palaeontological sites of significance, and protection of agricultural soils.

The Board is responsible for ensuring that the environmental protection measures which are implemented by companies are effective. This is accomplished by on-site inspection by Board staff and through follow-up reporting which is required of the companies.

Licences and Orders

The National Energy Board Act requires the Board, in considering applications for export licences, to take into consideration all matters that appear to it to be relevant. It must, among other things, satisfy itself that the quantities of energy involved do not exceed the surplus remaining after allowance has been made for reasonably foreseeable Canadian requirements for that particular form of energy. The Board must also be

satisfied that the prices charged for exports are just and reasonable in relation to the public interest.

Regulation of Pipeline Rates, Tolls, Tariffs and Accounting Practices

The Board regulates the rates, tolls and tariffs of pipeline companies under federal jurisdiction to ensure that there is no unjust discrimination against any person or locality. The rates, tolls, or tariffs allowed reflect, among other things, the capital and operating costs of the pipeline company and the necessity for it to earn an adequate return on its investment so as to be able to attract capital as needed to maintain and extend service.

The Board has established uniform accounting classifications and practices which it requires oil and gas pipeline companies under its jurisdiction to use.

Responsibilities under the Petroleum Administration Act

The Board is required to administer certain provisions of the Petroleum Administration Act; namely the imposition and collection of a charge on the export of crude oil and certain petroleum products and the regulation of the price of natural gas in interprovincial and export trade.

Responsibilities under the Northern Pipeline Act.

The Northern Pipeline Act, passed on 12 April 1978, provided the authority for the construction of the natural gas pipeline in Canada along the Alaska Highway, as well as for the creation of a Northern Pipeline Agency to oversee the construction of the pipeline. Certain terms and conditions in the legislation require the company to seek approval of the Board and the Minister responsible for the Northern Pipeline Act.

The Board's responsibilities relate mainly to the incentive rate of return schemes, financing and tariffs, approval of pipe specifications and the granting of leave to open orders. Under an agreement between the federal government and Foothills Pipe Lines (Yukon) Ltd. (the Dempster Link Agreement), the company has been required to carry out feasibility studies leading to an application to construct a lateral

pipeline along the Dempster Highway from the Mackenzie Delta to Whitehorse. This application was filed with the Board on 29 June 1979.

Implementation of Board Decisions

When the Board is prepared to grant a certificate for a pipeline or a power line or to issue a licence for the export of natural gas or electricity, the import of natural gas or the export of oil for a period exceeding one year, it so reports to the Governor in Council through the Minister of Energy, Mines and Resources. If the issuance of a certificate is approved by the Governor in Council, the certificate is then issued by the Board. In the case of an export application, a licence issued by the Board goes into effect as soon as it is approved by the Governor in Council. When the Board refuses an application, the decision is not subject to referral to the Governor in Council. The Board's reports on all these matters are issued as public documents.

Because of the special nature of the trade in crude oil and petroleum products — specifically the use of short-term contracts and the need to make decisions on a daily basis — oil export controls (except for licences for periods in excess of one year) are implemented directly by the Board without reference to the Governor in Council.

Applications for orders authorizing the export of natural gas, ethane, propane, butanes and ethylene for periods of up to one year, are also dealt with by the Board without reference to the Governor in Council. Decisions regarding rates, tolls, and tariffs are implemented by the Board without reference to the Governor in Council.

Appeals of Board Decisions

The National Energy Board is a Court of Record. With regard to attendance, the swearing and examination of witnesses, the production and inspection of documents, and the enforcement of its orders, it has all the powers vested in a superior court of record.

Under section 17(1) of the National Energy Board Act, the Board may review, rescind or change any order or decision made by it, or may re-hear any application before deciding it. Under section 17(2) of the Act, the Board may change a certificate or licence issued by it

but no such change is effective until approved by the Governor in Council. Parties may apply to the Board, pursuant to these sections of the Act, requesting the Board to review an order, decision, licence or certificate.

A decision or order of the Board may be appealed to the Federal Court of Appeal providing the appeal is based upon a point of law or of jurisdiction. Leave to appeal must be obtained upon application made within one month after the making of the Board's decision or order, or within such further times as that Court, under special circumstances, allows.

Judgments of the Federal Court of Appeal may, with leave, be appealed to the Supreme Court of Canada. The Federal Court of Appeal also has jurisdiction to review and set aside a decision or order of the National Energy Board upon certain stipulated grounds.

The Trial Division of the Federal Court of Canada has exclusive jurisdiction to issue an injunction, writ of certiorari, writ of prohibition, writ of mandamus, or writ of quo warranto, or to grant declaratory relief against any federal board, commission or other tribunal.

HIGHLIGHTS OF THE BOARD'S OPERATIONS IN 1979

Public Hearings

During 1979 the Board conducted all or part of 13 hearings in locations from Ottawa Ont. to Vancouver, B.C. during the course of which it sat for a total of 159 days.

The following is a summary of some of the decisions rendered in 1979, following public hearings.

- The Board approved an application by Westcoast Transmission Company Limited to operate certain pipeline facilities in British Columbia owned by Gas Trunk Line of British Columbia Ltd., a subsidiary of Westcoast. The 254 km of pipeline facilities constitute four sections of the Fort St. John, B.C. gathering system, and are an integral part of Westcoast's overall utility system.

- In February the Board released its report on Natural Gas Supply and Requirements. The main conclusions were:

- that surplus should be determined using three tests.
- that surplus gas exists (approximately 2 Tcf), which could be exported over a period of some eight years.
- that established reserves in the conventional producing areas of Canada were 66.1 Tcf at the end of 1978, some 4.7 Tcf more than the Board estimated for year-end 1976 in its Northern Pipelines Report in June 1977.
- that supply in the frontier areas was found to be
 - a) 5.3 Tcf of established reserves in the Mackenzie Delta- Beaufort Sea area and
 - b) 9.2 Tcf of established reserves in the Arctic Islands.
- that growth in demand for natural gas in existing markets would average three percent per year between 1978 and 2000
- that growth in demand in the expansion markets of Quebec and the Maritimes might, under certain conditions, be approximately 180 Bcf in 1990, rising to 255 Bcf in 2000.

- The Board granted three licences to St. Lawrence Power Company to export firm and interruptible electric power and energy.

- A certificate was granted to Westcoast Transmission Company Limited for construction of facilities connecting the Junior-Ekwan-Sierra-Sahtaneh gas

reserves of northeastern British Columbia to gas treatment facilities and then to the Westcoast mainline gas transmission system.

- Saskatchewan Power Corporation was granted a certificate to construct a 230 kV international power line and four licences to export firm and interruptible power and energy. The power line is about 15 km in length from the Boundary Dam station to the international boundary southeast of Estevan, Saskatchewan.

- The Board issued a licence to Dome Petroleum Limited for the export of a total of $19\,069 \times 10^3 \text{m}^3$ of ethane. The licence runs until 31 December 1993.

- The Board made a new tariff order for TransCanada PipeLines Limited, effective 1 August 1979. The Reasons for Decision allowed TransCanada a rate of return on rate base of 10.9 percent, which reflected an allowed rate of return on common equity of 14.0 percent. The tariff was also adjusted to account for cost changes arising from various causes including inflation.

- Foothills Pipe Lines (Yukon) Ltd. appeared before the Board in June for Phase I of a four-part hearing concerning the tolls and tariffs to be charged on Canadian sections of the Alaska Highway Natural Gas Pipeline.

The Board issued a report on each phase of the hearing as it was completed. The report concerning the first phase, which dealt with tariffs and financing of the pipeline, was released on 30 July.

Phase II of the hearing, relating to proposed 'prebuilt' portions of the pipeline, was held in August and the report issued on 4 October. The decision related to the tariff for facilities which would be prebuilt to carry Alberta gas to export markets before Alaska gas begins to flow.

Phase III began on 23 October 1979 and the report was issued on 20 December 1979. The report included a review of certain parts of the Phase I Decision on the main line tariff, specified the rate of return under the Incentive Rate of Return Scheme and clarified minor tariff items pertaining to the Phase I Decision and the Phase II Decision on the 'prebuilt' tariff. In addition, the Board's Decision modified its January 1979 proposal for the Incentive Rate of Return scheme by eliminating the effect of inflation outside Foothills (Yukon)'s control.

- A licence was issued to Dow Chemical of Canada, Limited for the export of interruptible electric energy from its plant at Sarnia, Ontario.

- The Board granted two licences to Fraser Inc. to export firm and interruptible power and energy.

- A decision was issued in October on the tolls and tariffs of Westcoast Transmission Company Limited.

A monthly cost of service toll was approved, providing for a return on common equity of 14.25 percent. The tolls also include provisions for normalized income taxes, but not for the amortization of deferred taxes.

- Following the issue in February of the Natural Gas Supply and Requirements Report, which identified a potential exportable surplus, ten export applications were received and a hearing was held during the summer.

Based on the evidence adduced at the hearing, the Board updated its estimate of remaining established reserves in the conventional producing areas of Canada from 69.7 EJ at the end of 1978 to 75.7 EJ at the end of 1979. The estimate of established reserves in frontier areas was not changed from that contained in the February report.

As a result of a review of the Board's previously published forecast of Canadian requirements, the February forecast was revised downward. However, for the purposes of determining surplus, the Board decided to use the earlier forecast, which, being higher, would afford a greater degree of protection for future Canadian requirements.

On the basis of the revised reserves and requirements forecasts, the Board authorized new exports of natural gas amounting to $106\,239 \times 10^6 \text{m}^3$ to the following ten companies:

	10^6m^3
Alberta & Southern Gas Co. Ltd.	2 520
Canadian-Montana Pipe Line Company	2 083
Columbia Gas Development of Canada Ltd.	2 394
Niagara Gas Transmission Limited	718
ProGas Limited	17 050
Sulpetro Limited	1 838
Westcoast Transmission Company Limited	6 356
Pan-Alberta Gas Ltd.	51 010
TransCanada PipeLines Limited	10 896
Consolidated Natural Gas Limited	11 374
	<u>106 239</u>

- On 4 April 1978, TransCanada PipeLines Limited filed an application with the Board for a certificate to construct and operate a pipeline to the Provinces of Quebec, New Brunswick and Nova Scotia. This application was amended on 30 March 1979. On 20 October 1978, Q & M Pipe Lines Ltd. also applied to the Board for a certificate to construct and operate a pipeline extending from Montreal, Quebec to Halifax, Nova Scotia. This application was subsequently revised by Q & M on 9 December 1978 and 26 April 1979.

On 5 November 1979, both Applicants amended their separate applications by proposing a joint venture. TransCanada proposed to extend its gas pipeline facilities in Quebec to Lévis/Lauzon, while Q & M proposed to construct gas pipeline facilities from Lévis/Lauzon to Halifax, Nova Scotia. TransCanada and Q & M jointly proposed the construction and operation of 1 200 km of mainline, 2 300 km of lateral lines, eleven compressor stations and an underground storage facility at Sussex, New Brunswick. Hearings commenced on 25 September 1979, in Ottawa, and further hearings are scheduled in 1980 in Quebec City, Halifax, Fredericton and Ottawa.

- In April 1979, Trans Mountain Pipe Line Company Ltd. and Foothills Oil Pipe Line applied for certificates under Section 44 of the National Energy Board Act authorizing the construction and operation of pipelines for the purpose of transporting Alaskan and offshore crude oils from the west coast to Edmonton, Alberta, for trans-shipment to the northern part of the United States.

The Trans Mountain proposal consists of 1 089 km of 762 mm pipeline extending from the international border near Sumas, Washington, to Edmonton, Alberta. This pipeline would be located on the existing Trans Mountain right-of-way and would utilize two existing loops totalling approximately 160 km of 762 mm of pipe.

The Foothills proposal originally consisted of 111 km of 914 mm pipeline and 1 009 km of 864 mm pipeline from White Pass, Yukon to Keg River, Alberta. Prior to the commencement of the combined hearing, Foothills revised its application to 2 118 km of 864 mm pipeline extending from the international boundary between Yukon and Alaska, to Edmonton, Alberta.

During the hearing, Foothills requested that consideration of its application be postponed.

The hearing of the Trans Mountain application was completed on 13 November 1979. As of year-end a decision was pending.

- During 1979, the Board received two applications for the construction of a lateral line from the TransCanada mainline near North Bay, Ontario, to Temiscamingue, Quebec. TransCanada proposed to construct and operate a 39 km, 168 mm lateral line from North Bay to the Ontario-Quebec border near Thorne, Ontario. Champion Pipe Line Corporation proposed a 2 km, 219 mm extension of the lateral from near Thorne to Temiscamingue. The hearing was held in Temiscamingue during November. As of 31 December 1979, a decision was pending.

- In July 1979, TransCanada submitted an application to construct a 49 km, 914 mm O.D. loop from Maple to Lisgar in Ontario. The Board opened a hearing on this application in Ottawa in November 1979. At year-end, the hearing was scheduled to reconvene in early 1980.

- On 3 December 1979, Interprovincial Pipe Line Limited submitted an application for replacement of 46 km of 864 mm pipeline in the Edmonton area. This application had not been set down for public hearing as of 31 December 1979.

- In May the Board received an application from B.C. Hydro and Power Authority for licences to export firm and interruptible energy. In June, B.C. Hydro amended its application to request authority to increase the capacity of the Tsawwassen-Point Roberts international power line. Shortly after the commencement of the public hearing in Vancouver in December the Board decided to adjourn the licence phase of the hearing until January 1980 but proceeded in respect of the application for a certificate.

- Canadian Niagara applied for licences to export interruptible energy. A public hearing is scheduled to be held in Ottawa in January 1980.

- Hydro-Québec applied for a licence to export power and energy to utilities in the state of Vermont. The Board issued a deficiency letter in November and at the end of 1979 was awaiting Hydro-Québec's reply.

In 1979 the Board issued a total of 2 217 certificates, licences, orders and authorizations. This represents a 25 percent decrease compared to the 2 903 issued in 1978. The authorizations included three certificates of public convenience and necessity; 980 licences and orders for the export or import of natural gas, oil, refined hydrocarbons, and power; 50 orders exempting pipeline and power companies from certain requirements of the Act; 23 orders approving plans, profiles and books of reference for new pipelines or portions thereof, as well as deviations and replacements of existing pipelines; 12 orders approving plans for compressor, pump and meter stations; 267 orders granting 'leave-to-open' for oil or gas pipeline facilities; 79 orders authorizing the operation of existing pipeline facilities at operating pressures higher than those previously permitted; 1 order approving the sale of pipeline fee lands; 1 order approving the sale, conveyance, purchase, lease or assignment of parts of power facilities; 783 orders relating to the crossing of and by pipelines with regard to other utilities, highways and railways; 19 amendments to the Natural Gas Price Regulations and special and general orders of the Board.

The estimated cost of construction projects which were authorized by the Board in 1979 amounted to \$39 million.

Litigation

The Board was involved in the following litigation in 1979, all of which was commenced in previous years.

The Yukon Conservation Society applied to the Federal Court of Appeal on 2 August 1977 for leave to appeal the Board's Northern Pipeline Decision under section 18 of the National Energy Board Act. The application alleged that the Board exceeded its jurisdiction and breached the rules of natural justice in approving the issue of a certificate for a pipeline route which had not been formally requested by any of the applicants to the Board, and in not giving notice to the Yukon Conservation Society and others that the Board was considering such a pipeline route. The application also alleged that the Board exceeded its jurisdiction by adjudicating upon the Northern Pipeline applications without having before it all the information required by the Schedule to the National Energy Board Rules of Practice and Procedure, and by conditioning its decision to require Foothills Pipe Lines (Yukon) Ltd. to apply to the Board by 1 July

1979 for a certificate under section 44 of the National Energy Board Act for a pipeline along the route of the Dempster Highway. The application was dismissed by the Federal Court of Appeal.

In December 1976 the Board issued its decision in an application by TransCanada PipeLines Limited ('TransCanada') in respect of its tolls and tariffs under Part IV of the National Energy Board Act. As part of its decision, the Board disallowed the sale price of gas under the contract of 1 November 1969 for gas sold by TransCanada to Saskatchewan Power Corporation and Many Islands Pipe Lines Limited, and substituted for that price the Saskatchewan CD Zone rate determined by the Board. On 11 May 1977, Saskatchewan Power Corporation and Many Islands Pipe Lines Limited applied to the Federal Court of Appeal for leave to appeal the Board's decision and an extension of time for filing that application under section 18 of the National Energy Board Act. The application, *inter alia*, raised questions as to the Board's jurisdiction to vary the price stipulated in a contract for the sale of gas transported through and interprovincial pipeline. On 24 June 1977 the Federal Court of Appeal granted an extension of time and leave to appeal the Board's December 1976 decision. It is anticipated that this appeal will be heard in February 1980.

By an application dated 15 September 1977 Westcoast Transmission Company Limited ('Westcoast') applied to the Board for an order respecting tolls which Westcoast proposed to charge for gas produced in British Columbia and sold by Westcoast to its British Columbia and export customers. The Board ordered that the application be heard in three separate phases, of which Phase I was concerned with the issues of depreciation and income taxes. The decision on Phase I was issued by the Board on 24 May 1978. Shortly thereafter, several interested parties made application for appeal under section 18 of the National Energy Board Act and review under section 28 of the Federal Court Act of this decision, as well as requesting a review by the Board pursuant to section 17 of the National Energy Board Act. The Court actions were by agreement held in abeyance pending the result of the review decision by the Board. The review decision, which was issued on 7 December 1978, has also been the subject of appeal and review action in the Federal Court. In

September 1979, the Board issued its final decision in this rate case, and in December 1979 dismissed an application by Westcoast for review of certain aspects of it. The actions filed in the Federal Court remain pending.

By application dated 14 March 1977, Trans Mountain Pipe Line Company Ltd. ('Trans Mountain') applied to the National Energy Board for an order under section 50 of the National Energy Board Act, *inter alia*, 'directing it to file a revised tariff pursuant to section 51 of the Act'. Pursuant to subsection 14(1) of the National Energy Board Act, the Board authorized one of its members, as Presiding Member, to take evidence and hear submissions respecting the application by Trans Mountain, for the purpose of making a report to the Board. Accordingly, the Board, having received and considered the Presiding Member's report, adopted that report and issued an order which, *inter alia*, prescribed the tolls to be charged by Trans Mountain effective 1 February 1978. Trans Mountain obtained leave to appeal to the Federal Court pursuant to section 18 of the National Energy Board Act, objecting (a) to the procedure adopted by the Board pursuant to the provisions of subsection 14(1), and (b) in respect of certain matters under Part IV of the Act. The case was argued in Vancouver, and on 23 February 1979 the Federal Court of Appeal dismissed the action. Trans Mountain then made application for leave to appeal to the Supreme Court of Canada. This application was also dismissed.

On 15 November 1977, the Board commenced a hearing in Fort St. John, British Columbia, on two applications by Westcoast Transmission Company Limited for certificates under section 44 of the National Energy Board Act in relation to two pipelines proposed to be constructed in northeastern British Columbia. At the opening of the hearing, the Union of British Columbia Indian Chiefs requested an adjournment of the hearing, which request was denied by the Presiding Member. On 18 November 1977, the Union applied to the Federal Court under section 18 of the Federal Court Act for a writ of prohibition, with certiorari in aid, to restrain the Board from continuing with its proceedings on these applications and to quash the proceedings to date. On 7 December 1977, the Trial Division of the Federal Court dismissed the Union's application. The Court held, on the facts of the case, that adequate notice of the hearing had been given to the Union and that the refusal of an

adjournment was not tainted with unfairness or denial of natural justice. On 12 December 1977, the Union appealed the Court's judgment to the Federal Court of Appeal. No date has been set as yet for the hearing of this appeal.

Also, arising out of the same circumstances, an action was launched on 17 March 1978 in the Federal Court by Mr. Angus Davis and the Union of British Columbia Indian Chiefs against the National Energy Board, claiming general, special and punitive damages for breach of a statutory duty owed to Angus Davis and the Union of British Columbia Indian Chiefs. This action still awaits the disposal of certain preliminary matters before proceeding to trial.

Membership of the Board

There were three new Board Members appointed in March of 1979.

John R. Hardie, a chartered accountant since 1942 joined the Board on 9 March 1979. Mr. Hardie's professional experience includes working with Gulf Canada Limited in various capacities, and as Comptroller of the Canadian Arctic Gas Study Limited and Controller of Loram International Limited.

Jacques L. Trudel was appointed Member of the National Energy Board on 26 March 1979. Mr. Trudel was employed by a leading food products manufacturer for nineteen years. Mr. Trudel was elected to the House of Commons in 1968 and was re-elected in 1972 and 1974. During this period, he served as Chairman of the Finance, Trade and Economic Affairs Committee and as Chairman of the Quebec Caucus of the Liberal Party. In 1975, Mr. Trudel was appointed Parliamentary Secretary to the Minister of Finance. In 1976, he was appointed Parliamentary Secretary to the President of the Treasury Board.

R. Byron Horner, a lawyer, was appointed National Energy Board Member on 27 March 1979. Mr. Horner was employed by Gulf Canada Limited in 1956. In 1965 he was appointed Official Guardian and Registrar in Bankruptcy for the Province of Saskatchewan. Mr. Horner was later the Chairman of the Saskatchewan Securities Commission.

Mr. Robert A. Stead retired in May 1979 after a distinguished career in public service. Prior to being

appointed a Board Member in 1976, Mr. Stead was Secretary to the Board since 1966, Director General of Operations from 1972 to 1974, and Special Advisor to the Chairman since 1974. Before his service with the Board, Mr. Stead was Deputy Naval Secretary, Royal Canadian Navy.

Budget and Personnel

For the fiscal year 1979-80, the Board's budget is \$13,085,000 with a person-year allocation of 393. During 1978-79 the budget was \$11,839,405 with 367 person-years.

Official Languages Act

The Board has continued its efforts to improve its capability to provide service in both official languages and to promote the use of both languages in its internal organization.

20th Anniversary

In November the Board celebrated the 20th Anniversary of its coming into being in 1959.

REVIEW OF THE YEAR

Supply and Demand

Domestic production of crude oil and equivalent hydrocarbons averaged $257 \times 10^3 \text{ m}^3$ per day in 1979, an increase of 13 percent over 1978. The surplus of production available for export declined and in the case of light crude oil virtually disappeared under the impact of greatly increased demand from the Canadian refining industry faced with the loss of much of its foreign supply. As the year progressed, shut-in capacity of conventional crude oil in Alberta was brought into production as part of the required response to the loss of imported oil supply. As a result, conventional light crude oil production increased by $23 \times 10^3 \text{ m}^3$ per day in 1979 over the previous year.

Synthetic crude oil production, although hampered by various plant upsets, increased by $6 \times 10^3 \text{ m}^3$ in 1979 as a result of the Syncrude start-up in July 1978.

A total of $9\,101 \text{ m}^3$ of crude oil and equivalent was licensed for export in 1979, together with $7\,225 \text{ m}^3$ of refined petroleum products.

Canada's total net installed electrical generating capability at the end of 1979 was approximately 75 400 megawatts (MW), of which hydroelectric plants accounted for approximately 58 percent, conventional thermal stations 35 percent and nuclear power 7 percent. Total Canadian consumption of electric energy in 1979 is estimated to have been 323 000 gigawatt-hours (GW.h), up about 3 percent from 1978. Total exports of electric energy in 1979 were 31 378 GW.h, an increase of 45 percent over the previous year.

Natural gas production in Canada during the year increased by 9.6 percent from $70\,284 \times 10^6 \text{ m}^3$ in 1978 to an estimated $77\,024 \times 10^6 \text{ m}^3$ in 1979. Of the total production, $44\,475 \times 10^6 \text{ m}^3$ were net sales to ultimate Canadian consumers, an increase of 6.5 percent over the previous year. This increase was primarily attributable to the connection of new natural gas customers. Exports to the United States amounted to $28\,345 \times 10^6 \text{ m}^3$, or 36.8 percent of total production.

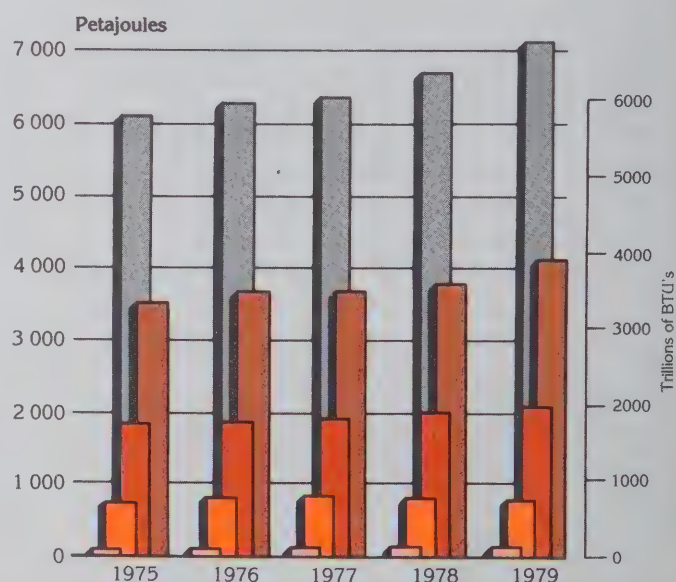
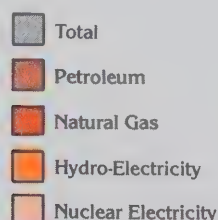
While this level of exports represented an increase of 13.6 percent over the previous year, it was in line with pre-1978 export levels and was less than the maximum level of exports authorized.

Canadian Consumption of Selected Energies

Figure 1

	1975	1976	1977	1978 (p)	1979 (e)
Petroleum	3 478.7	3 607.5	3 607.7	3 773.1	4 154.0
Natural Gas	1 840.0	1 888.3	1 970.5	2 011.6	2 105.0
Hydro-Electricity	707.4	738.6	736.8	778.6	775.9
Nuclear Electricity	42.7	59.1	89.5	106.0	120.3
Total	6 068.8	6 293.5	6 404.5	6 669.3	7 155.2

(p) preliminary (e) estimates



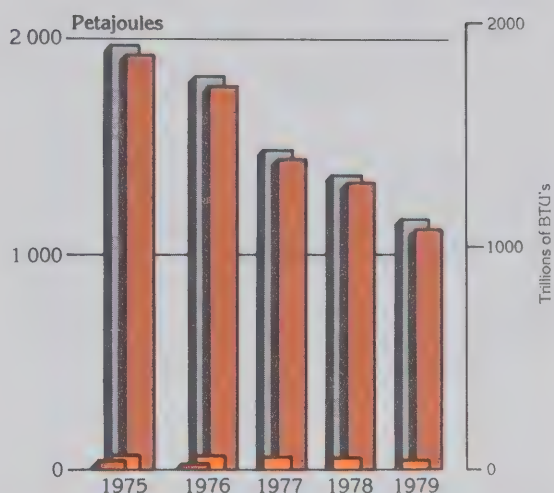
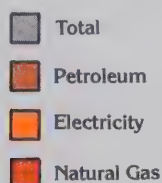
Imports of Petroleum, Natural Gas and Electricity

Figure 2 (a)

	1975	1976	1977	1978 (p)	1979 (e)
Petroleum	1 923.6	1 778.1	1 443.0	1 335.5	1 176.5
Natural Gas	11.3	4.5	—*	.1	—*
Electricity	41.9	37.9	38.4	22.1	18.9
Total	1 976.8	1 820.5	1 471.4	1 357.7	1 195.4

(p) preliminary (e) estimates

* less than 0.1 PJ

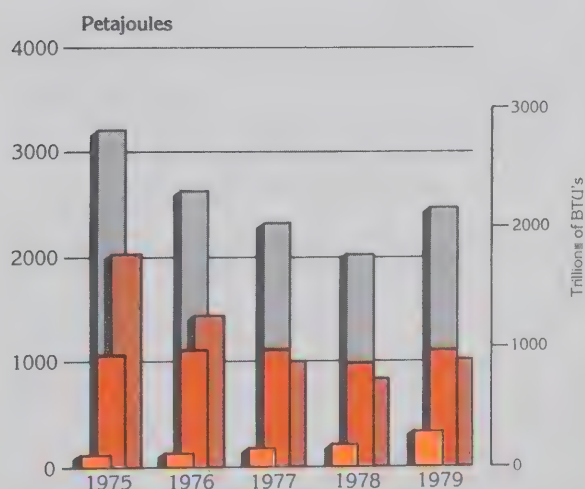
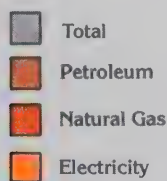


Exports of Petroleum, Natural Gas and Electricity

Figure 2 (b)

	1975	1976	1977	1978 (p)	1979 (e)
Petroleum	2 028.0	1 423.3	1 000.7	807.2	1 051.3
Natural Gas	1 051.7	1 059.2	1 111.1	978.7	1 111.4
Electricity	120.0	135.0	210.5	227.8	331.2
Total	3 199.7	2 617.5	2 322.3	2 013.7	2 493.9

(p) preliminary (e) estimates



Oil and Gas Reserves

The Board's estimate of remaining established reserves of conventional crude oil as of 31 December 1978 is $866.5 \times 10^6 \text{m}^3$, or $52.4 \times 10^6 \text{m}^3$ lower than the 31 December 1977 estimate.

Initial established reserves at 31 December 1978 were estimated at $2\,265.0 \times 10^6 \text{m}^3$, an increase of $20.4 \times 10^6 \text{m}^3$ from the 31 December 1977 estimate of $2\,244.6 \times 10^6 \text{m}^3$. Production in 1978 was $72.8 \times 10^6 \text{m}^3$.

Estimated Established Reserves of Conventional Crude Oil at 31 December 1978

	(10 ⁶ m ³)	
	Initial	Remaining
British Columbia	71.2	22.9
Alberta	1 800.7	738.8
Saskatchewan	347.8	91.3
Manitoba	26.1	6.7
Northwest Territories	9.5	5.9
Ontario	9.7	.9
CANADA TOTAL	2 265.0	866.5

Note: Propane, butanes and pentanes plus not included.

The Board's estimate of remaining established reserves of marketable natural gas in the conventional producing areas as of 31 December 1978 is 74.0 EJ, 5.9 EJ higher than its 31 December 1977 estimate.

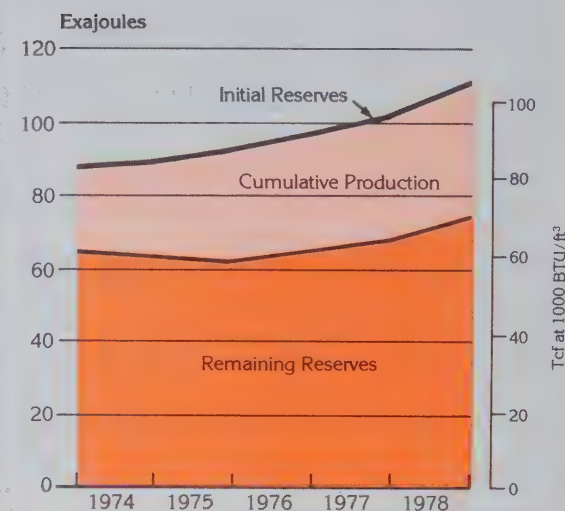
Additions to initial established marketable reserves during 1978 were 8.9 EJ of which 7.7 EJ were in Alberta, 0.8 EJ in British Columbia and 0.3 EJ in Saskatchewan. The initial marketable reserves of the Yukon and Northwest Territories, excluding the Mackenzie Delta and Arctic Islands, were increased by 0.1 EJ in recognition of the Kotaneelee Field.

Estimate of Established Reserves of Marketable Natural Gas at 31 December 1978

	(EJ)	
	Initial	Remaining
British Columbia	12.6	7.6
Alberta	94.4	64.4
Saskatchewan	2.3	1.4
Southern Yukon & Northwest Territories	0.5	0.3
Ontario and Other Eastern Canada		
Conventional Producing Area	1.1	0.3
Total	110.9	74.0
Mackenzie Delta	5.6	5.6
Arctic Islands	9.7	9.7
CANADA TOTAL	126.2	89.3

Figure 3

Established Reserves of Marketable Natural Gas from Conventional Producing Areas



EXPLORATION & DEVELOPMENT ACTIVITY

- OIL & NATURAL GAS

In 1979 exploratory drilling activity in the western provinces declined slightly from the previous year. Approximately 2 800 wells were drilled in 1979 compared with 3 000 wells in 1978, 2 700 in 1977, and 2 400 in 1976.

Preliminary estimates indicate that about 4 500 development wells were drilled in the western provinces in 1979, a significant increase over the 3 800 wells drilled in 1978 and 3 200 wells in 1977.

Saskatchewan had the most notable increase in total wells drilled with some 1 250 wells completed in 1979 compared with 920 in 1978. In the frontier areas, drilling activity increased for the first time in six years. A total of 34 wells were completed in the Territories mainland, the Mackenzie Delta, the Beaufort Sea, the Arctic Islands, and in waters off the Atlantic coast compared with 22 wells drilled in 1978.

The number of drilling rigs in Canada increased to an all-time high of 500 with a utilization rate of nearly 75 percent. Total well completions for 1979 are expected to approach 8 000, up about 10 percent over 1978.

There were 66 geophysical crews operating in the western provinces at year-end, compared with 80 a year earlier. The following is a summary of the significant activity which took place during the year. (LOCATIONS ARE IDENTIFIED ON THE ACCOMPANYING MAP.).

Alberta

While the Deep Basin area of west-central Alberta received most of the publicity during the year, drilling activity continued at record levels throughout the province.

Several natural gas discoveries and/or field extensions were made in the foothills belt, in the Waterton⁽¹⁾, Panther River⁽²⁾, and Stolberg⁽²⁾ areas. The Brazeau River⁽³⁾ gas field was determined to extend further eastwards and the Strachan gas field was also enlarged.

Drilling in the Deep Basin has demonstrated that reservoirs exist in the area from which conventional oil and gas production can be obtained; the Elmworth Field⁽⁷⁾ commenced production in November 1979 at a rate of $2.8 \times 10^6 \text{ m}^3$ per day.

Halfway oil discoveries north of the Elmworth area (in the Wembly, Beaverlodge and Hythe areas) and Cardium and Dunvegan oil discoveries southeast of the Elmworth area (in the Lator, Cutbank River, Kakwa, and Simonette areas) point to an oil potential for the Deep Basin.

An interesting oil discovery took place on the Blood Indian Reserve⁽⁴⁾ in southwestern Alberta - interesting because the producing zone is the Wabamun formation which had not produced oil anywhere in the vicinity. Heavy oil sands in the McMurray formation were encountered in the northeast portion (Twps. 71-73, Rges. 4-9 W4) of the Primrose Lake Air Weapons Range⁽⁶⁾, with pay thicknesses up to 45 metres.

British Columbia

Drilling activity in British Columbia maintained the upturn started in late 1976, although the rate of growth was less than that achieved in 1978. The Fort St. John area⁽⁸⁾ was particularly active and a number of successful wells were recorded. The Eagle oil field in the Fort St. John area was under active development with 78 oil wells now completed in the Belloy formation, as compared with 38 wells a year ago.

Gas discoveries were made in and immediately east of the foothills belt, in the Grizzly-Sukunka area⁽⁹⁾, one of which (BP AEG W. Sukunka c-45-J) was located on a structural trend west of the Sukunka field which had not previously proven productive. While attempts to locate 'Elmworth conglomerate type' gas discoveries in the Deep Basin of British Columbia were apparently not successful, natural gas was discovered in other zones, notably the Halfway formation.

Saskatchewan

The substantial increase in drilling activity in Saskatchewan during 1979 was primarily the result of operations in the heavy oil belt in the west-central section of the province⁽¹⁰⁾. A Mississippian oil play is developing 18 km west of Weyburn at Tatagwa⁽¹¹⁾ where four oil strikes have been reported.

Yukon and Northwest Territories Mainland

A total of 15 wells were completed in the Yukon and Northwest Territories. As part of a program to substantially increase oil production from the Norman Wells field⁽¹²⁾, 11 wells (6 water injection wells, 2 oil

Figure 4

Oil and Gas Developments



production wells and 3 delineation wells) were drilled into the Norman Wells reservoir. Three of these wells were drilled from ice platforms and have confirmed the continuity of the reservoir beneath the Mackenzie River. One of the water injection wells was an experimental horizontally deviated well.

The Paramount et al Liard D-29⁽¹³⁾, Paramount HB et al Cameron Hills M-31⁽¹⁴⁾, and Aquitaine Alder Y. T. C-33⁽¹⁵⁾ wells were dry and abandoned. A water disposal well was completed in the Kotaneelee Field and a development well, Y.T. I-48, was being drilled at year-end. The Kotaneelee gas field⁽¹³⁾ was put on production for a brief period during 1979, through the Westcoast pipeline system.

Mackenzie Delta - Beaufort Sea

Well completions in the Mackenzie Delta-Beaufort Sea were reduced from previous years. Four wells were completed: one oil discovery and three dry holes. In the Beaufort Sea the Dome Gulf et al Hunt Kopanoar M-13⁽¹⁶⁾ well, located 80 km from the mainland, was reported to be an oil discovery. The well was reported to have flowed 28° API oil at a rate in excess of 950 m³ per day from a depth of 3 500 m and was reported to have the potential of producing at twice that rate. A follow-up test on the same structure, 4 km to the northwest was spudded late in 1979 and suspended until the 1980 drilling season. The three abandoned wells were the Dome Gulf et al Ukalerk 2C-50, the Esso Adgo J-27, and the Esso Pex Napartok M-01. The Ukalerk 2C-50 well did, however, test gas at 85 x 10³m³ per day at a depth of 2 012 m.

Operations at five wells, Dome Nerlerk M-98, Dome Gulf Tarsiut A-25, Dome Pacific et al Pex Natsek E-56, Dome et al Kenalooak J-94, and Hunt Dome Koakoak O-22, were suspended with the end of the operations season and are to be resumed in 1980. At the Nerlerk M-98⁽¹⁷⁾ well several oil-stained sections remain to be tested; non-commercial oil with water was recovered from the well on tests to date. The Tarsiut A-25 well⁽¹⁸⁾ also encountered oil-stained zones which have yet to be tested.

Arctic Islands

In the Arctic Islands nine wells were completed in 1979, and one well was being drilled at year-end. The only successful well was the Panarctic AIEG Whitefish

H-63⁽¹⁹⁾, an offshore well which found gas in the King Christian sand, and in two upper zones. A follow-up well, Whitefish G-63, was being drilled at year-end to further test the structure and also to test the lower zones which the Whitefish H-63 could not reach because of termination of the drilling season.

East Coast Offshore

In waters off the east coast during 1979, seven wells were completed, three wells were suspended, and one well, the Chevron et al Hibernia P-15, was testing at year-end.

Two wells were drilled in the Davis Strait, off the southeast tip of Baffin Island. The Esso HB Gjoa G-37 was dry and abandoned, while the Aquitaine et al Hekja A-72⁽²¹⁾ was reported to have encountered hydrocarbon shows before being suspended for the year.

Four wells were drilled on the Labrador Shelf. The Total Eastcan et al Tyrk P-100 and Total Eastcan et al Gilbert F-53 were dry and abandoned. The Total Eastcan et al Roberval K-92, 10 km northwest of the 1974 gas discovery at Gudrid H-55, will be re-entered in 1980. The Total Eastcan et al Bjarni O-82⁽²²⁾, 6 km northwest of 1973 gas discovery at Bjarni H-81, is reported to have encountered shows of hydrocarbons and will also be re-entered in 1980.

Four wells were drilled on the East Newfoundland Shelf. Three of these, BP et al Hare Bay E-21, Esso Voyager Gabriel C-60, and Texaco Shell et al Blue H-28, had no hydrocarbon shows and were abandoned. The fourth, Chevron et al Hibernia P-15⁽²³⁾, which has the potential of being a major oil strike, was still testing at year-end. This well is located some 320 km east of St. John's in 83 m of water and is reported to have tested three oil zones with a combined capacity of 3 200 m³ per day of oil 30° to 36° API. A step-out well is to be spudded early in 1980 to further delineate this discovery.

The only well drilled on the Scotia Shelf in 1979, Mobil Texaco Pex Venture D-23⁽²⁰⁾, located 13 km east of Sable Island, was a gas discovery. This well encountered six gas zones, three of which were tested at rates up to 620 x 10³m³ per day with condensate. A step-out well is planned for 1980.

OPERATIONS REVIEW

OIL AND PETROLEUM PRODUCTS

Operations in the Canadian oil industry in 1979 were greatly affected by the worsened international oil supply situation. The loss of traditional sources of imports by some refining companies and marketers had to be made up from increased crude oil production in Western Canada where a modest level of reserve capacity existed, together with a curtailment of crude oil exports to the United States. Refinery crude runs in Quebec and the Atlantic Provinces, where the impact of import losses was mainly felt, were maintained at an average level of $131.3 \times 10^3 \text{ m}^3$ per day, about 2.5 percent higher than the 1978 level. Refinery runs in the rest of the country rose by over 11 percent to an average $180.1 \times 10^3 \text{ m}^3$ per day, a reflection in part of the eastward shift of refinery marketing spheres and higher oil product demand in Western Canada. There was also an increase in the Canadian demand for most products, notably for motor gasoline.

There was only one major adjustment to Canadian crude oil prices in 1979. The domestic price was raised by \$6.30 per m^3 effective 1 July 1979, bringing the average well-head price of Alberta crude to \$86.55 per m^3 in the second half of the year. Increases in the prices of internationally traded crude oils were the principal reason for substantial increases in export charges over the year.

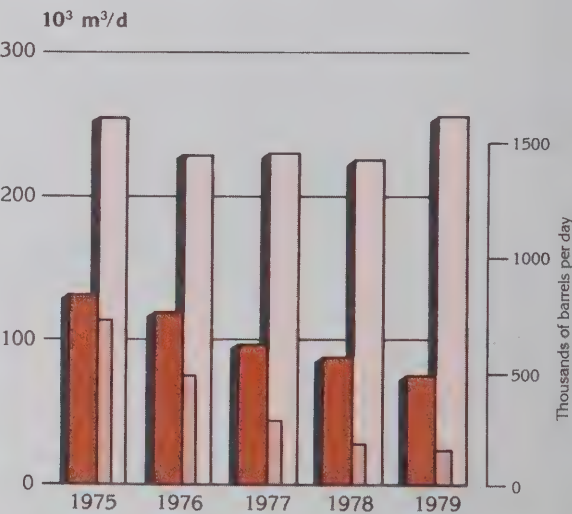
The Board, through its monitoring system based on information supplied by oil companies operating in Canada, was able to provide the Government and the oil industry itself with regular assessments of the immediate and near-term supply outlook. Beginning in July, monthly meetings were held under Board chairmanship with the primary purpose of acquainting provincial governments with these assessments and consulting with their energy officials as to the appropriate policy and action at both levels of government.

Crude Oil and Equivalent Hydrocarbons Production, Imports and Exports 1975 to 1979

Figure 5

	1975	1976	1977	1978 (p)	1979 (e)
Canadian Production	251.004	229.609	230.479	227.642	257.121
Exports	112.405	73.917	43.216	27.665	24.972
Imports	129.932	119.874	95.786	86.616	78.017

(p) preliminary (e) estimates



Crude Oil Supply, Requirements, Exports and Exchanges

The production of crude oil and equivalent hydrocarbons in 1979 averaged $257 \times 10^3 \text{m}^3$ per day, some $30 \times 10^3 \text{m}^3$ per day or 13 percent greater than in the preceding year. Synthetic oil production averaged $14.6 \times 10^3 \text{m}^3$ per day, up by $5.8 \times 10^3 \text{m}^3$ per day from the 1978 level and fluctuating between a low of $9 \times 10^3 \text{m}^3$ per day in May and a high of $21 \times 10^3 \text{m}^3$ per day in August; the two plants involved, which had a combined average productive capacity of $28 \times 10^3 \text{m}^3$ per day, experienced a number of operating difficulties and mishaps over the year. The greater part of the overall increase occurred in the production of light conventional crude oil which itself rose by $24 \times 10^3 \text{m}^3$ per day or 11 percent; this increase was a sharp break with the practically stable production levels of the preceding few years and followed upon the reactivation of shut-in capacity in Western Canada in response to stringencies in the normal supply of imported crude oil to Eastern Canada.

Requirements in Canada for crude oil and equivalent were $312.7 \times 10^3 \text{m}^3$ per day in 1979, of which $215.5 \times 10^3 \text{m}^3$ per day was supplied from Canadian sources, $77.5 \times 10^3 \text{m}^3$ per day from direct imports and $19.7 \times 10^3 \text{m}^3$ per day from sources available to United States companies in the form of exchange oil. The full impact of the unsettled political and economic conditions in the international market is seen in the comparison with the experience of 1978, when $288.2 \times 10^3 \text{m}^3$ per day of Canadian requirements were met to the extent of $190.7 \times 10^3 \text{m}^3$ per day domestically, $83.2 \times 10^3 \text{m}^3$ per day by imports and $14.3 \times 10^3 \text{m}^3$ per day by exchanges.

The impact on Canadian crude oil exports was even more pronounced. With the sharp increase in the demand for Western crude oil by Eastern Canadian refineries deprived of much of their traditional offshore supply, and also by refineries further west which were required to expand their former supply areas, the surplus available for export shrank progressively. It was possible to maintain the previously established level of $8.7 \times 10^3 \text{m}^3$ per day of direct light crude exports only until October, after which exports were virtually eliminated for the remainder of 1979. Heavy crude oil exports were at an average of $18.1 \times 10^3 \text{m}^3$ per day for the year.

Beginning in January, the Board gave approval to a series of crude oil exchanges designed to alleviate the supply situation for Eastern Canadian refineries wholly or partially dependent on water-borne imports of crude oil which were then becoming increasingly in short supply. This type of exchange involved the shipment of a specified volume of Western Canadian oil by pipeline to an 'exchange partner' delivering a corresponding volume to the refiner in Eastern Canada, either via the Portland Pipeline or by tankship. A total of $6 \times 10^3 \text{m}^3$ per day in exchanges of this type were approved by the Board in 1979. They were additional to $13.7 \times 10^3 \text{m}^3$ per day of 'mid-continent' exchanges made under previously approved arrangements between Canadian companies and 'Northern Tier' refiners in the United States, which have been a continuing feature of Canadian oil trade in the past years.

NATURAL GAS AND GAS PRODUCTS

1979 saw another year of continued high levels of exploration and development activity by the Canadian natural gas industry, with the focus of such activity centred in the provinces of British Columbia and Alberta. The high level of activity was fuelled by higher producer revenues resulting from increased natural gas sales and prices in domestic and export markets.

Natural Gas Production and Consumption

In 1979 production of marketable natural gas increased by $6\,740 \times 10^6 \text{m}^3$ from 1978 levels, an increase of 9.6 percent. Net sales of natural gas in Canada during 1979 increased by $2\,730 \times 10^6 \text{m}^3$, an increase of 6.5 percent. The greatest percentage change occurred in the residential sector (7.0 percent) reflecting the continued connection of new customers, particularly in Alberta, Ontario and Quebec. In the industrial sector, which accounted for 56.1 percent of total net Canadian sales, natural gas consumption increased by 6.6 percent over the previous year. The commercial sector registered a 6.0 percent increase.

Domestic Natural Gas Pricing

With the enactment of the Petroleum Administration Act (PAA) in 1975, the Board was assigned responsibility for the administration of domestic natural gas pricing. Prices are established under Part III

of the PAA, which provides authority for the Government to achieve a uniform price, exclusive of transportation and service costs, for gas sold for consumption in Canada outside of its province of production, and provides the Government with a mechanism whereby the prices of gas and petroleum fuels in Canada can be kept in a reasonably balanced relationship. The Act is also intended to help achieve a balance between the interests of consumers and producers in Canada, while encouraging the development and production of natural gas.

Under the Act, the Minister of Energy, Mines and Resources may enter into an agreement with the government of a producer-province to establish prices for natural gas produced in that province. Such an agreement between the federal government and the government of Alberta was concluded in October 1975 and was subsequently amended in June 1976, June and July 1977, August 1978 and July 1979. The 1979 amendment to the agreement provided for the pricing of natural gas to be based upon a Toronto city-gate reference price of \$2.00 per GJ (\$2.15 per million British Thermal Units), effective 1 August 1979. The

agreed-upon reference price is approximately 85 percent of the heat equivalent value of the crude oil price delivered at Toronto. All other prices for natural gas sold in interprovincial trade are derived from the reference price by the application of transportation tolls determined by the Board.

During 1979, under the authority of Part III of the PAA, Domestic Gas Price Restraint, the Board prepared for the approval of the Governor in Council nine amendments to the Natural Gas Prices Regulations and eighteen special and general orders. The prices established as a result of these new regulations and orders reflected changes in natural gas prices throughout the natural gas marketing area in Canada, outside of the main producing province of Alberta.

As it has done in past years, the Board coordinated approvals of changes to natural gas pricing east of Alberta with the Alberta Petroleum Marketing Commission, which carries out functions similar to those of the Board with respect to the administration of gas pricing within Alberta.

Natural Gas Production

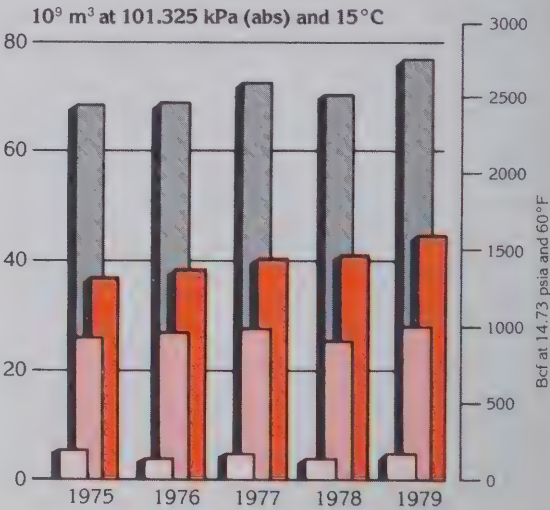
Figure 6

	1975	1976	1977	1978 (p)	1979 (e)
Net Sales in Canada	37.526	38.835	40.547	41.745	44.475
Other Cdn. Uses*	4.968	3.828	4.592	3.578	4.204
Exports	26.823	27.013	28.336	24.961	28.345
Total Production**	69.317	69.676	73.475	70.284	77.024

*Includes Pipeline Fuel & Losses but excludes Field Plant Uses & Losses

**Marketable Pipeline Gas

(p) preliminary (e) estimates



Natural Gas Export Price

Section 14 (formerly Section 11A) of the National Energy Board Part VI Regulations, adopted in 1970, requires the Board to maintain surveillance of natural gas export selling prices and report its findings and recommendations to the Governor in Council when, in the opinion of the Board, there has been a significant increase in prices for competing energy supplies in the export market. Pursuant to this section, the Board conducted a hearing in 1974 on the matter of natural gas exported under existing licences. In its initial report in July 1974, the Board put forward its principal recommendation that Canadian natural gas as a scarce non-renewable resource should be priced on the basis of its fair value as a commodity in international trade. In that report, the Board recommended that the export price of natural gas be increased in stages towards full market value based on prices of alternative sources in the related United States markets.

The Board's subsequent reports in 1975, 1976 and 1977 reflected a gradual shift in emphasis from commodity value to substitution or replacement cost as the determining factor in establishing the appropriate export price. The 'substitution value' concept considers that, in the absence of exports, gas could be substituted for imported oil in eastern Canada.

As a consequence of frequent changes in world crude oil prices, the Board conducted three export price reviews in 1979, as a result of which the export price was increased to \$2.14 per GJ (\$2.30 per MMBtu) on 1 May, to \$2.61 per GJ (\$2.80 per MMBtu) on 11 August and to \$3.22 per GJ (\$3.45 per MMBtu) on 3 November, all expressed in U.S. dollars.

Natural Gas Exports

Net exports of natural gas to the United States in 1979 totalled $28\,345 \times 10^6 \text{ m}^3$, an increase of 13.6 percent over the previous year. This increase can, in part, be attributed to several developments that took place in the United States markets, including off-line sales and increased usage, and expansion of certain underground storage facilities. In addition, certain changes to existing licences held by TransCanada PipeLines Limited permitted increases in the level of exports to the United States.

New licences and orders to export natural gas and amending orders issued in 1979 are tabulated in Appendices G-III and G-IV.

Exports of natural gas under each licence and order in 1979 are tabulated in Appendix G-V.

Ethylene

Three short-term ethylene orders were issued in 1979 for the exportation of ethylene via truck from Sarnia, Ontario. Esso Chemical Canada was issued two orders; one for the exportation of 150 000 kg during the period 7 June 1979 to 31 July 1979 and one for the exportation of 18 143 700 kg for the period 25 June 1979 to 31 March 1981. Dow Chemical of Canada Ltd. was issued an order for the exportation of 907 200 kg per month for the period 1 October 1979 to 31 December 1979.

Export Control of Propane and Butanes

Early in 1979, the Board completed an extensive review of the need to continue or modify the Board's Propane and Butanes Export Allocation Program. After giving careful consideration to the views of the LPG industry, provincial governments and agencies, and other interested parties, the Board determined that the existing export controls were in the public interest and should be continued on an indefinite basis for propane, while those on butanes should be continued until at least 31 March 1980. Accordingly, the Board has continued to establish an export percentage which, when applied to annual production, enables each company to calculate its volume available for export. In addition, the Board continues to set minimum export prices f.o.b. Alberta applicable to all propane and butanes exports.

During the current allocation year (1 April 1979 to 31 March 1980), the Board estimated that the total net Canadian production of propane would be $7\,448 \times 10^3 \text{ m}^3$, and $4\,395 \times 10^3 \text{ m}^3$ for butanes. Canadian requirements for propane were estimated to be $3\,162 \times 10^3 \text{ m}^3$, some 7.0 percent above the requirements of the previous year, while Canadian requirements for butanes were estimated to be $1\,758 \times 10^3 \text{ m}^3$, some 35.0 percent above the corresponding volumes for 1978. Increased requirements for propane in Canada during the first six months of the current allocation period required the Board to adjust, in early

December, the export percentage for the period 1 April 1979 to 31 March 1980 from 59 percent of current net production to 52 percent. During this same period, the export percentage of current net production of butanes remained at 60 percent, as established in May 1979.

For the year 1979, the total volume of propane exported from Canada was $4\,621.6 \times 10^3 \text{ m}^3$ or 62.0 percent of total net Canadian production. This compares with 1978 exports of $3\,531 \times 10^3 \text{ m}^3$. For butanes, the total volume exported in 1979 was $2\,726.0 \times 10^3 \text{ m}^3$ or 62.0 percent of total net Canadian production, compared with 1978 exports of $2\,211 \times 10^3 \text{ m}^3$, 54.5 percent of net Canadian production. As the 1979 export of Canadian LPG's to the United States was well above the corresponding level of exports in 1978, Canadian underground inventories in 1979 did not increase to the same extent as in 1978. The underground inventory of propane ranged from a low of $803 \times 10^3 \text{ m}^3$ to a maximum of $1\,397 \times 10^3 \text{ m}^3$ in 1979. The comparable figures for 1978 were $692 \times 10^3 \text{ m}^3$ and $1\,668 \times 10^3 \text{ m}^3$ respectively. For butanes, the 1979 inventory increased from $273 \times 10^3 \text{ m}^3$ to $559 \times 10^3 \text{ m}^3$ compared to an increase from $205 \times 10^3 \text{ m}^3$ to $574 \times 10^3 \text{ m}^3$ in 1978. The Board's minimum export prices for LPG, normally established monthly, varied from 4.3 cents to 5.5 cents per litre f.o.b. Alberta for propane and from 4.8 cents to 6.0 cents per litre f.o.b. Alberta for butanes.

PIPELINE ACTIVITIES

Oil, Product and High Vapour Pressure Pipelines

Following a pipeline break in July 1979, Interprovincial Pipe Line Company filed an application to replace 15.2 km of its Line 3 downstream of Edmonton. The work was necessitated by a history of failures attributable to stress corrosion cracking along the longitudinal pipe weld. The Board approved the application and work was completed in November 1979.

As a result of monitoring of the Interprovincial Sarnia to Montreal pipeline, using electronic califering equipment, a large number of dents were found to exist in the pipeline system. During the course of the year, Interprovincial investigated its pipeline at 203 locations and made repairs at 60 locations.

In May 1979, Trans Northern applied to the Board to loop 16.7 km of pipeline between Oakville and Clarkson, Ontario, and to make certain modifications at the Oakville pump and meter station and at the Clarkson Junction in Ontario and to build one new pump station at Castleton to replace the de-activated pump station at Brighton. The Board approved this application. Construction was completed in the late autumn of 1979, and leave-to-open was granted in November.

Trans Mountain, as part of an upgrading program begun three years ago, has continued to repair dents and corrosion - related defects detected as a result of a linalog survey of its system.

Additional activities approved by the Board and which were subject to field inspection included installation of pumping facilities at various pumping stations operated by Manito Pipeline, an 8 km extension to the Petroleum Transmission system to connect to underground storage facilities at Procor, Saskatchewan, a dual 8.5 km extension to the Cochin system to connect to the same storage facilities, two 62 000 cubic metre crude oil storage tanks added to the Interprovincial system at Sarnia, Ontario, and installation, modification and deactivation of pumping facilities at various pumping stations operated by Trans Northern.

During 1979, Cochin Pipe Line constructed 134 km of pipeline in Ontario to effect the movement of ethylene from Windsor to Sarnia. Particular features relating to the construction of this pipeline included the numerous drain tiles to be crossed and the preservation of the soil fertility in this highly productive agricultural area. Following completion of this pipeline, Cochin and Dome NGL interchanged the ownership of their pipelines, which are in the same right-of-way, in order to improve the operation of the two pipelines.

Natural Gas Pipelines

Construction activities carried out under Board jurisdiction during 1979 included completion of the Pine River Gas processing plant near Chetwynd, B.C., looping of 41 km of pipeline on the Westcoast system in the Coquihalla Canyon and Summit Lake areas in B.C. and replacement of approximately 30 km of mainline on the Westcoast systems and 32 km on the

TransCanada system with heavier wall pipe to accommodate changes in population density. The change-out of approximately 48 km of pipe between North Bay and Toronto was completed by TransCanada, such work having been necessitated by concern that the pipe might contain hard spots which could be initiation points for pipe failure. TransCanada looped 12 km of line in the Toronto area between Maple and Victoria Station. As part of its upgrading program, TransCanada also carried out an extensive program of pipe change-outs at road crossings and installation of automatic closing devices on mainline valves.

In consideration of an application by TransCanada arising from their ongoing re-rating program the Board authorized an increase in operating pressure from 6 453 kPa to 6 895 kPa on those sections of the line between Winnipeg, Manitoba and North Bay, Ontario which had not previously been re-rated.

Following up on work initiated in 1978, TransCanada continued its program of cutting out and replacing pipe dents. These dents, which are due to rocks, were detected using in-line electronic 'pigging' devices.

Major projects approved by the Board but not completed in 1979, include the Westcoast Junior-Sierra pipeline system located in northern B.C., major additions to the McMahon plant at Taylor Flats, B.C., the replacement of 20 km of pipe on the Westcoast gathering system in the Fort St. John, B.C. area to comply with code requirements with respect to changes in population density and the looping of 10 km on the TransCanada lateral serving Sault Ste. Marie, Ontario.

Alaska Highway Gas Pipeline

Arising from its responsibilities for approving pipe specifications and granting of leave-to-open orders for the Alaska Highway gas pipeline, the Board has reviewed proposals relating to the frost heave, thaw settlement and metallurgical aspects of the design of the pipeline.

Pipeline Crossings by Third Parties

The Board has jurisdiction over approximately 27 900 km of pipelines located in all provinces from British

Columbia to Quebec. In the interest of ensuring the safe operation of these pipelines, any third-party construction activity affecting these pipelines requires authorization from the Board. During 1979, a total of 746 orders were issued authorizing crossings of pipelines by third parties. Authorizations were given only after consideration of all relevant information related to each crossing. These crossings include the construction of highways, the installation of sewers, watermains, culverts, telephone or power lines and the crossing of pipelines by other utilities. The Board also granted approval relating to dam installations, landscaping, dredging operations, parking lots, etc. where pipelines under its jurisdiction were affected.

Arising from its concerns relating to construction practices by third parties during the installation of crossings, the Board now conditions approvals to require the presence of a pipeline company representative during excavation and backfilling of the pipe.

The installation of unauthorized crossings is an item of continuing concern to the Board. To ensure that provincial and municipal officials, contractors and utility companies are more generally aware of Board requirements, emphasis is being placed on increased contact with such groups.

All applications filed with the Board for the purpose of obtaining authorization for a crossing are kept on record and are available to companies and to the general public.

Pipeline Incidents

The safe operation of pipelines, including the protection of the general public, and the employees and facilities belonging to companies under the Board's jurisdiction, continued to receive attention during 1979. A total of 48 incidents occurred during the year. Each incident was analysed and, where appropriate, investigated by engineering personnel and by environmental specialists. When necessary, corrective actions were instituted to prevent further occurrences. A statistical breakdown of all incidents is contained in a table in this section of the Report. The following is a review of the major incidents.

On 3 January 1979, a backhoe performing unauthorized construction work outside Oakville,

Figure 7

Causes of Pipeline Incidents

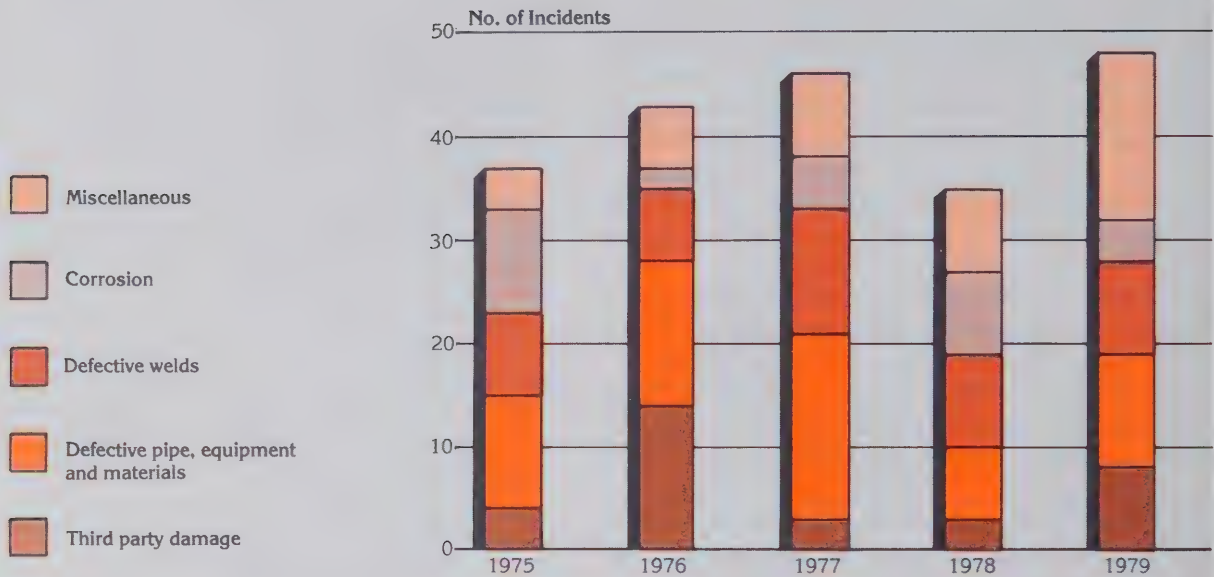
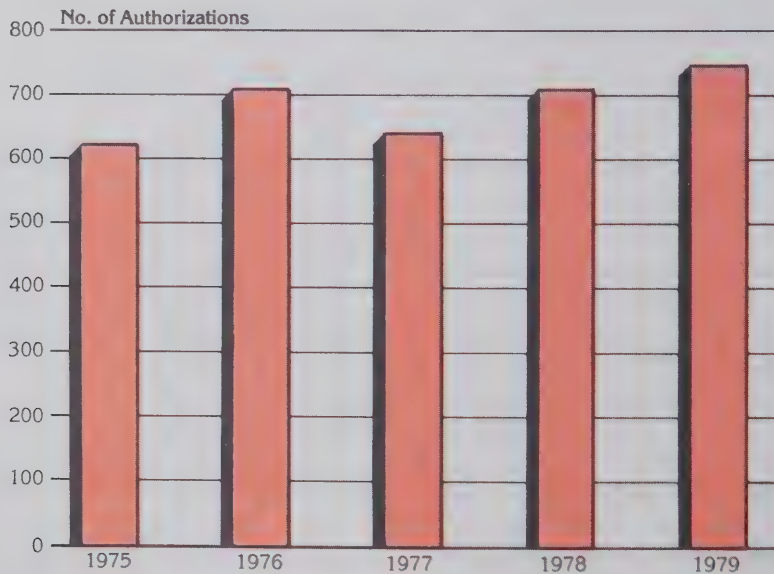


Figure 8

Authorization Granted to Third Parties to Construct Crossings of Pipelines



Ontario, caused a leak in the Trans Northern Pipe Line 273.1 mm products line. A total of 98 m³ of gasoline was spilled, but the spill was contained on frozen ground and cleaned up with no serious environmental effects. As the pipeline parallels the Canadian National rail line at the location of the incident, CN was advised to discontinue rail traffic in that location until emergency repairs could be completed.

On 15 January 1979, a rupture occurred on the Clarke Lake Loop of Westcoast Transmission Company's Fort St. John gas gathering system. An estimated 350 x 10³m³ of natural gas containing hydrogen sulphide were released to the atmosphere. The cause of the pipe failure was determined to be external corrosion. There were no injuries or fatalities.

On 30 May 1979, TransCanada line 100-1 ruptured near Englehart, Ontario. The fracture propagated for 599 m. The escaping gas caught fire, damaging hydro and telephone lines and causing minor burn injuries to four members of a family living near the site of the accident. Approximately 2 800 x 10³m³ of sweet gas were lost. Subsequent investigation indicated that the fracture resulted from mechanical damage which probably occurred during original construction.

On 4 July 1979, a failure occurred in the Interprovincial Line 3 near Edmonton, Alberta. An investigation by the Board revealed that the break originated in a faulty longitudinal weld. About 1 589 m³ of oil were spilled, covering one hectare of land and killing trout in a stocked pond. Subsequently, Interprovincial replaced a 15 km length of defective pipe and the company filed an application for replacement of an additional 46 km of pipeline.

On 3 September 1979, one welder was killed and another was injured as a result of an explosion which occurred during a welding operation on the tail gas line at Westcoast Transmission Company's sulphur plant, near Fort Nelson, B.C.

On 7 September 1979, an expansion turbine starter failed on the TransCanada system near Winnipeg, Manitoba, resulting in a flash fire in which one employee suffered severe burns requiring hospitalization.

On 5 October 1979, a failure in the high pressure lubricating system at TransCanada's compressor

station near Barrie, Ontario, resulted in a spill of approximately 200 litres of lubricating oil, which is a neurotoxic agent. Heavy rains subsequently washed the lubricant onto adjacent pasture land, resulting in the death of seven head of cattle. The matter was under investigation at year end.

On 25 October 1979, an accident occurred near Windsor, Ontario, during construction of Cochin Pipe Line's high vapour pressure line, resulting in a serious injury to the contractor's superintendent.

This accident was investigated by the Workmen's Compensation Board of Ontario.

Summary of 1979 Pipeline Incidents

	Natural Gas	Oil & Product	High Vapour	Total
Equipment Failure	1	7	3	
External Corrosion	1	0	0	
Internal Corrosion	0	3	0	
Settlement/Rock Slides	2	2		
Other	9	2	1	
Third Party Damage	2	1	5	
Defective Welds	7		2	
	22	15	11	48

Inspection and Environmental Surveillance

The Board carried out full inspection of construction on the Westcoast Coquihalla looping project, on the Cochin Sarnia to Windsor high vapour pressure pipeline and on the Trans Northern looping program from Oakville to Clarkson. Partial inspection was carried out on all other pipeline extensions, looping and replacement projects. Inspection emphasis was on welding quality and environmental protection. A total of 15 non-compliance orders were issued. In all instances satisfactory corrective measures were instituted. The field inspection was supplemented by site-specific environmental investigations. Inspection also extended to operational activities including compressor and pump station shutdown tests, cathodic protection surveys, leak surveys and general facility inspections to determine compliance with the regulations. Inspections were carried out to assess the effectiveness of mitigative procedures and long-term environmental impacts of both construction activities and oil spill incidents.

ELECTRICITY

Total Canadian consumption of electric energy in 1979 is estimated to have been 323 000 GW.h, about 2 percent more than in 1978.

At the end of 1978 Canada's total net installed electrical generating capability was 71 084 MW, of which hydroelectric plants accounted for 41 856 MW, conventional thermal stations 24 724 MW and nuclear power 4 504 MW. Planned additions in 1979 were approximately 1 181 MW of hydro, 2 220 MW of conventional thermal and 894 MW of nuclear power for a total planned increase of 6 percent. The planned additions would bring the total net installed generating capability to approximately 75 400 MW.

International and Interprovincial Transfers of Electricity

Gross exports of electricity in 1979 were 31 378 GW.h (21 602 GW.h in 1978) and imports were 1 792 GW.h (2 092 GW.h in 1978), resulting in estimated net exports of 29 586 GW.h (19 510 GW.h in 1978).

These net exports constituted about 8 percent of total Canadian generation (about 6 percent in 1978). Exports revenues of about \$739 million (\$479 million in 1978) and import costs of less than \$1 million (\$2 million in 1978) resulted in a net revenue of approximately \$738 million (\$477 million in 1978).

In 1979 total Canadian electricity exports were 45 percent higher than in 1978 and earned 54 percent more revenue. The quantities are shown in Appendices E-V and E-VI.

Returns submitted to the Board by the major exporting utilities showed that of the exports over the major system interconnections in 1979, 49 percent of the exported energy was derived from hydro generation, 38 percent from imported coal, 11 percent from imported oil, and 1 percent from nuclear and Canadian fossil fuel, and of the remaining 2 percent most was purchased from adjacent utilities.

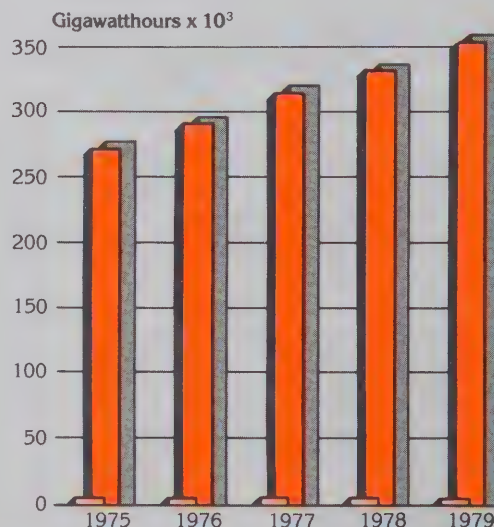
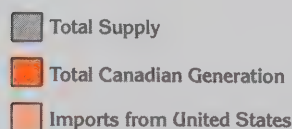
Before electricity can be sold to United States markets it must be offered to neighbouring Canadian markets and be found to be surplus to Canadian requirements. For these reasons the Board monitors Canadian

Electricity Supply

Figure 9

	1975	1976	1977	1978 (p)	1979 (e)
Total Canadian Generation	273.392	294.043	317.196	335.708	354.018
Imports from United States	3.972	3.590	2.690	2.092	1.792
Total Supply	277.364	297.633	319.886	337.800	355.810

(p) preliminary (e) estimates



power generation and interprovincial transfers although it does not regulate these matters.

Electricity supply and demand are tabulated and displayed in Figures 9 and 10. Figure 11 shows the exports and imports in 1979 as well as interprovincial transfers for the 12 months ending October 1979.

The major contributor to the increase in total exports of 9 800 GW.h was Hydro-Québec. In 1979 Hydro-Québec exported five times as much electricity and earned seven times as much revenue as in 1978. This increase was due to the commissioning in the fall of 1978 of a new 765 kV interconnection with The Power Authority of the State of New York. During the period April to October, Hydro-Québec exported 3 000 GW.h of firm 'Diversity Power', the maximum quantity authorized by the Board. In addition the utility exported over 63 percent of the authorized annual limit of interruptible energy.

The accident at the Three Mile Island nuclear plant in Pennsylvania and reduced operations at other U.S. nuclear plants enabled Ontario Hydro and The New Brunswick Electric Power Commission to export larger

amounts of electricity. Ontario Hydro's exports aided in saving scarce and high-priced oil in the U.S.

As a result of excellent hydraulic conditions, Manitoba Hydro increased its export sales by 33 percent over 1978. Because of water shed diversity between British Columbia and the Pacific Northwest of the United States, B.C. Hydro was able to assist the United States during the low streamflow conditions there.

Electrical Applications

New certificates of public convenience and necessity and amending orders issued during 1979 are tabulated in Appendices E-I and E-II.

New licences and orders to export power and energy and amending orders issued in 1979 are tabulated in Appendices E-III and E-IV.

Exports of electric energy under each licence and order in 1979 are tabulated in Appendix E-V and the total electric energy trade for 1979 is shown in Appendix E-VI.

Electricity Demand

Figure 10

	1975	1976	1977	1978 ^(p)	1979 ^(e)
Total Canadian Consumption	265.989	284.829	299.929	316.198	324.412
Exports to United States	11.375	12.804	19.957	21.602	31.398
Total Demand	277.364	297.633	319.886	337.800	355.810

(p) preliminary (e) estimates

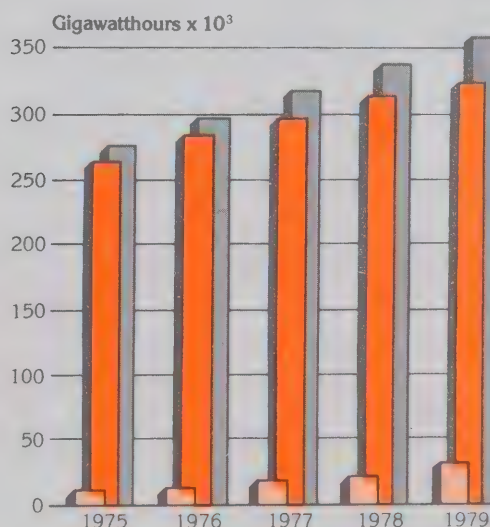
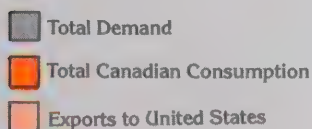
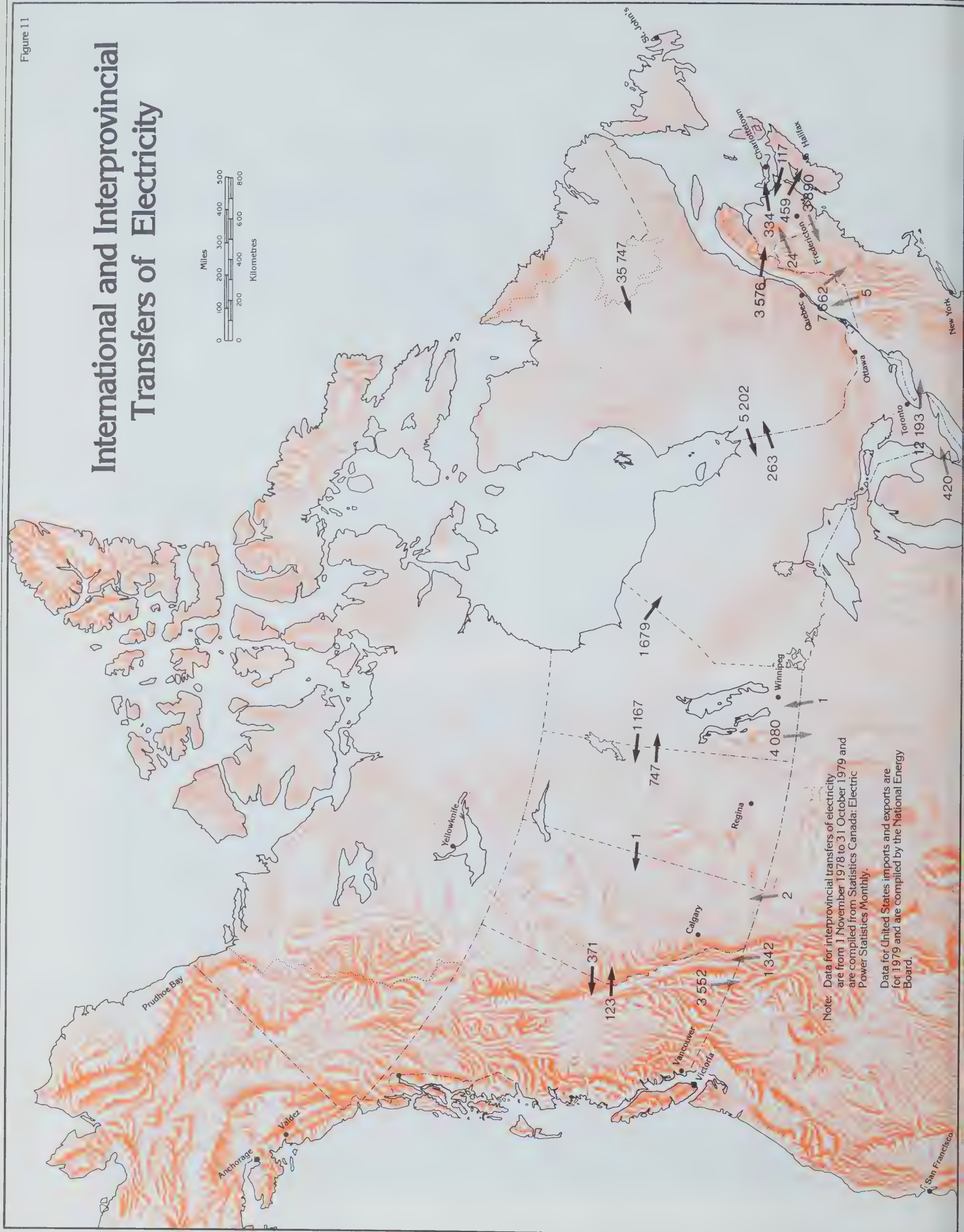
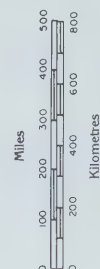


Figure 11

International and Interprovincial Transfers of Electricity



Note: Data for interprovincial transfers of electricity are from 1 November 1978 to 31 October 1979 and are compiled from Statistics Canada: Electric Power Statistics Monthly.

Data for United States imports and exports are for 1979 and are compiled by the National Energy Board.

Other Activities

At year end, work was underway on a report on the output, fuel consumption and operating characteristics of Canadian thermal electrical generating stations in 1978. Staff provided advisory services to other departments and outside agencies in various areas during 1979, including staff representation on two committees on the development and incorporation stage of the Maritime Energy Corporation. Electricity supply forecast activities were undertaken as part of the Board's total energy forecast including the development of a computer program to facilitate these activities. Work also was initiated on the electric field effects of transmission lines on pipelines. Studies are also continuing on power system reliability including the transmission systems to evaluate the cost and worth of reliability to electric power consumers.

Following up these studies and the regulatory work of the Branch, the staff presented technical papers to Canadian and international electrical engineering societies and other organizations on Fundy Tidal Power, on the WASP (Wien Automatic System Planning) generation program, and on very fast techniques for the simulation of generation production costs. The staff took part in the United States/Canada Electricity Exchange Study which was set up by Vice-President Mondale and Prime Minister Trudeau in January 1978. The report was published in May 1979.

FINANCIAL REGULATORY MATTERS

The Board's involvement in pipeline tariff determination continued to grow in 1979 with the increasing frequency of applications made in respect of tolls and tariffs. This increasing frequency is largely attributable to changes in factors affected by inflation together with the continuing emergence of regulatory issues such as the impact of non-regulated activities upon a company's transmission charges. It is expected that this growth trend will continue in the coming years with the increasing number and complexity of regulatory issues arising from economic and other forms of change.

Under the provisions of the Petroleum Administration Act and Regulations, audits were conducted of the oil and oil product exports reported to the Board, including the export charges levied and paid thereon.

Where warranted, adjustments to the charges paid were made which gave rise to either the assessment of additional charges or the refund of export charge overpayments. During 1979, the Board collected and transmitted to the Receiver General approximately \$715.6 million. The program for the audit of licensed exports of propane and butanes was continued in 1979.

During the year the Board maintained its surveillance of the accounting and financial activities of 23 oil and gas pipeline companies under its jurisdiction. This was accomplished through the analysis of periodic and/or special reports required by the Board in conjunction with ongoing field audits to verify compliance with the Board's Uniform Accounting Regulations. Special audits were also carried out to measure compliance with specific directives issued by the Board in relation to accounting and rate-making matters such as the treatment to be accorded particular items of rate base or cost of service. As a measure intended to complement its surveillance function and reduce the number of rate hearings, the Toll Information Regulations were passed in April 1979 under the authority of section 88 of the National Energy Board Act (SOR/79-319). These regulations enable the Board to obtain information directly from the pipeline companies falling within its jurisdiction so as to be able to compare and analyse the actual operating results of companies with the estimates used as a basis for fixing the tolls and tariffs giving rise to those results.

The Board is continuing the internal review of its regulatory procedures in the above areas with the object of improving communications between itself and applicants and intervenors in connection with applications made under Part IV of the National Energy Board Act. As a result of this review the National Energy Board Rules of Practice and Procedure were amended (SOR/78-667 22 August 1978) to include regulations pertaining to the information required to be filed by a gas pipeline company applying for an order fixing tolls or tariffs under Part IV of the Act. Development of similar amendments applying to oil pipeline companies continues, their completion being expected in 1980. Also, the Board recognized the need for amendments to the Oil and Gas Uniform Accounting Regulations to update them in respect of currently accepted accounting principles, practices and terminology and work in this area will continue in 1980.

The regulations applicable to oil pipeline companies were amended in 1977 while the work on the regulations applicable to gas pipeline companies continues. Completion of these modifications is expected during 1980.

ECONOMIC MATTERS

In August 1979, the Board adopted a set of 'Guidelines for the preparation of regional socio-economic impact assessments of gas or oil pipeline projects' for use in the preparation of pipeline certificate applications under section 44 of the NEB Act. A large number of interested parties were given an opportunity to comment on the guidelines prior to their being issued by the Board.

The Board received evidence relating to the economic impact, the net economic benefit and the Canadian content and industrial benefit of proposed pipelines and exports of gas under sections 44 and 83 of the Act. During 1979, the Board further developed its own economic models used in assessing this evidence and, through cooperation with other agencies, extended the use made of outside models to include, for

example, Statistics Canada's Regional Input-Output Model.

The Board prepared long-term macroeconomic and energy demand forecasts in analyzing submitted evidence for use in the determination of the surplus of oil, gas and power over and above the reasonably foreseeable requirements of each of these for use in Canada in accordance with sections 83 and 87 of the Act. The Board's forecasts published in February 1979 were revised downward during the year to reflect higher prices, lower economic activity and reduced population forecasts. Papers presented to the Canadian Energy Policy Modelling Conference, describing the demand forecasting system of the Board which reflects a total energy approach, provided the basis for continuing dialogue on forecasting methods with interested parties. These papers will be published in 1980. Increased attention was paid during the year to the short-term economic outlook, particularly the outlook for inflation and wages and their effect on transmission costs. Studies initiated during 1979 on the economics of Canadian petroleum exploration and development are expected to continue.

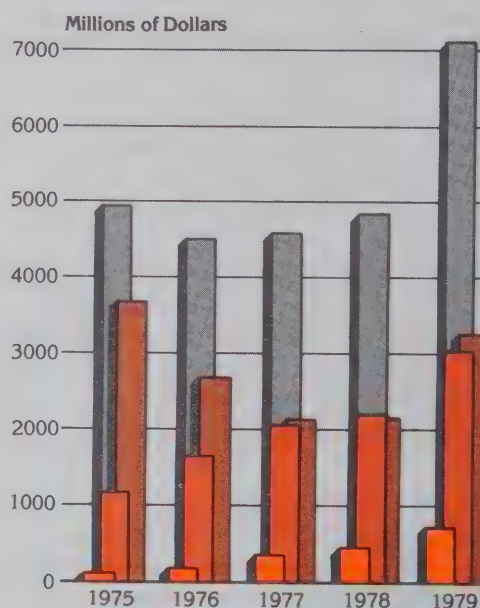
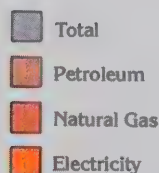
Dollar Value of Exports of Oil, Gas and Electricity (Gross)

Figure 12

	1975	1976	1977	1978 (p)	1979 (e)
Petroleum	3 689.1	2 689.4	2 132.3	2 161.3	3 328.0
Natural Gas	1 166.3	1 631.7	2 075.9	2 215.7	3 063.5
Electricity	104.9	173.8	419.3	478.6	738.5
Total	4 960.3	4 494.9	4 627.5	4 855.6	7 130.0

(p) preliminary

(e) estimates



ORGANIZATION OF THE NATIONAL ENERGY BOARD

The Board is divided into nine separate branches; the following is a brief outline of the responsibilities of each branch.

Administrative Services Branch

Provides administrative support to the Board, including such functions as finance, personnel, official languages, library, communications, security and office service.

Economics Branch

Advises the Board on general economic and related policy aspects of matters relevant to the Board's responsibilities. More specifically, develops short and long-term forecasts of energy demand and macro-economic projections. Is responsible for energy and economic statistics including supply/demand balances for all sources of energy. Provides economic analyses and advice in relation to projects and rate cases being assessed by the Board, including macro-economic, regional and socio-economic impact assessments, social cost-benefit, economics of the energy industry, Canadian content studies and analyses of escalation rates pertaining to wages, salaries, benefits and material costs. Prepares assessments of the economic implications of federal, provincial and international energy policies, developments and relations.

Electric Power Branch

Advises the Board on all matters concerning electric power including regulatory operations associated with authorizing the construction of international power lines and with licensing exports of power; conducts studies on various aspects of the planning and engineering of electric power systems and power generation.

Energy Resources Branch

Advises on matters of oil and gas exploration, drilling and production. Forecasts trends in oil and gas supply from conventional, oil sands and synthetic sources and independently calculates the reserves and deliverability of gas and the reserves and producibility of oil. Is responsible for the determination of possible surplus of oil and gas and for the implementation of the Board's protection policies and procedures relative

to exports. The Calgary office of the Energy Resources Branch is engaged in the actual pool by pool calculation of gas and oil reserves.

Engineering Branch

Advises the Board on technical, safety and environmental matters relating to the design, construction and operation of oil, product, gas and high vapour pressure pipeline systems including compressor and pump stations, gas processing and LNG plants; inspects and monitors pipeline construction and pipeline operations to ensure compliance with the NEB Act, regulations, Board Orders, and applicable codes and standards; evaluates proposals for the expansion, extension, replacement and repair of pipeline systems; carries out independent studies on the technical feasibility, cost of service, and safety related aspects of pipelines in conventional, frontier arctic and offshore areas; investigates oil spills and pipeline breaks; develops environmental and safety related regulations and guidelines; provides engineering and environmental assessments on applications before the Board; maintains a detailed record system on utility crossings and right-of-way encroachments; advises on landowner and right-of-way matters.

Financial Regulatory Branch

Provides advice on rates, financial and accounting matters in respect of regulatory and advisory functions. Analyses and recommends on the financial aspects of construction of oil and gas pipelines, including financial feasibility, methods of financing and the capital structure of applicants. Examines the rate structures including methods of rates, tolls and tariff designs of oil and natural gas pipelines. Organizes and conducts field audits of pipeline companies and licensed exporters of oil and gas. Develops uniform accounting regulations for pipeline companies.

Gas Advisory Branch

Acts as the Board's primary advisor on matters affecting natural gas and gas products policy. Provides the staff advice on the pricing of natural gas exports, the administration of Part III of the Petroleum Administration Act which is concerned with domestic natural gas price and the administration of the propane/butanes export control programme. Analyzes and makes recommendations on market and

regulatory aspects of natural gas certificate, rates and export licence applications, provides short-term gas industry and market analysis, and coordinates all matters relative to export controls on ethane and ethylene.

Law Branch

Advises the Board on its statutory powers, prepares regulations and rules of procedure, prepares draft amendments to the Act, examines witnesses at hearings, assists in the preparation and review of submissions to Governor in Council, Reasons for Decision, Orders and Certificates and conducts litigation for and on behalf of the Board.

Oil Policy Branch

Acts as the Board's principal staff source of information and advice on national and international matters affecting oil markets and policy. Estimates domestic demand for oil in the short term. Monitors oil flows, inventories and supply for feedstocks and refined oils in Canada. Provides the staff advice and appraisals on oil exports and export prices, for the administration and enforcement of Part I of the Petroleum Administration Act and for other regulatory activity.

BOARD MEMBERS

J.G. Stabback	Chairman
C.G. Edge	Vice-Chairman
L.M. Thur	Associate Vice-Chairman
W.A. Scotland	Associate Vice-Chairman (Designated Officer-Northern Pipeline Agency)
R.F. Brooks	Associate Vice-Chairman
J. Farmer	Member
J.R. Jenkins	Member
J.R. Hardie	Member
J.L. Trudel	Member
R.B. Horner	Member

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B.H. Whittle	Secretary
G. Yorke Slader	Assistant Secretary
A.Plante	Information Officer
G.G. Michaud	Chief, Secretariat

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A.B. Gilmour	Director General, Operations
M.E. LeClerc	Director General, Special Projects

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F.G. Dyson	Director
R.J. McElroy	Assistant Director (Finance)
S.H. Goldstein	Assistant Director (Personnel)
S. Corbeil	Assistant Director (Administration)

COMPUTER SYSTEMS GROUP

D. Emmens	Manager
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ECONOMICS BRANCH

P. Eglington	Director
A.L. Kosegi	Assistant Director, Applied Research
G.H. Shaw	Assistant Director, Policy Analysis and Forecasts

ELECTRIC POWER BRANCH

E.S. Bell	Director
T. Olszewski	A/Assistant Director, Operations
A.N. Karas	Assistant Director, Planning

ENERGY RESOURCES BRANCH

K.W. Vollman	Director
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G.C. Hos	A/Assistant Director, Oil Supply

ENGINEERING BRANCH

J.R. Eickmeier	Director
R.E. Jackson Jr.	Assistant Director, Gas Pipelines
T.S. Shwed	Assistant Director, Oil Pipelines
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FINANCIAL REGULATORY BRANCH

D.G. Harris	Director
J.W. Bigelow	A/Assistant Director, Research and Special Studies
G.S. Johnson	A/Assistant Director, Gas
J.A. Law	Assistant Director, Oil

GAS ADVISORY BRANCH

S.R. Ironstone	Director
P.L. Fournier	Assistant Director

LAW BRANCH

F.H. Lamar	General Council
J.M. Hendry	Assistant General Counsel

OIL POLICY BRANCH

P.G. Scotchmer	Director
B.P. Leakey	Assistant Director, Crude Oil
R.B. Stevens	A/Assistant Director, Refined Oil

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APPENDIX G-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR GAS PIPELINES ISSUED DURING 1979.

APPLICANT	FACILITIES	ESTIMATED COST	HEARD	ISSUED	CERTIFICATE NO.
Westcoast Transmission Company Limited (Gas Trunk Line of British Columbia Ltd.)	(A) Approximately 22 km of 323.9 mm O.D. line of pipe—North Jedney (B) Approximately 57 km of 406.4 mm O.D. line of pipe—Boundary Lake (C) Approximately 2 km of 168.3 mm O.D. line of pipe—Boundary Lake (D) Approximately 5 km of 168.3 mm O.D. line of pipe—North Beg (E) Approximately 9 km of 273.1 mm O.D. line of pipe—Jedney (F) Approximately 29 km of 323.9 mm O.D. line of pipe—Jedney (G) Approximately 4 km of 168.3 mm O.D. line of pipe—South Beg. (H) Approximately 44 km of 406.4 mm O.D. line of pipe—Beg (I) Approximately 3 km of 168.3 mm O.D. line of pipe—Boundary Leg Solution (J) Approximately 2 km of 273.1 mm O.D. line of pipe—Bubbles (K) Approximately 46 km of 406.4 mm O.D. line of pipe—Nig Creek (L) Approximately 38 km of 323.9 mm O.D. line of pipe—Laprise all in the province of British Columbia	N/A	13 August, 1978	9 February, 1979	GC-60
Westcoast Transmission Company Limited	Junior Sierra Pipeline (A) Approximately 13 km of 323.9 mm O.D. line of pipe—Junior Sierra Pipeline (B) Approximately 40 km of 406.4 mm O.D. line of pipe—Ekwan pipeline (C) Approximately 19 km of 406.4 mm O.D. line of pipe—Sierra-Sataneh pipeline (D) Approximately 61 km of 609.6 mm O.D. line of pipe—Sataneh pipeline (E) Fort Nelson, B.C. Sulphur plant additions all in the province of British Columbia	\$33,800,000	18-20 April, 1979	22 June, 1979	GC-61

APPENDIX G-II

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1979 CLASS B CONSTRUCTION

APPLICANT	FACILITIES	ESTIMATED COST	ISSUED	ORDER NO.
Canadian-Montana Pipe Line Company	Approximately 1 km of 114 mm pipeline in Alberta	\$ 15,000	5 April 1979	XG-1-79 (as amended)
TransCanada PipeLines Limited	Corbyville Meter Station in Ontario	103,500	10 Aug. 1979	XG-3-79
	Landmark Meter Station in Manitoba	114,080	10 Aug. 1979	XG-4-79
	Ignace Meter Station in Ontario	43,600	7 Sept. 1979	XG-6-79
	Pittsburgh Meter Station in Ontario	112,000	17 Oct. 1979	XG-10-79
	Approximately 10 km of 324 mm pipeline in Ontario (Sault Ste. Marie Security Loop)	2,058,900	24 Oct. 1979	XG-11-79
Westcoast Transmission Company Limited	Approximately 33 km of 914 mm pipeline in British Columbia (Coquihalla Loop)	\$20,436,400	5 April, 1979	XG-2-79
	Approximately 9 km of 914 mm pipeline in British Columbia (Summit Lake Loop)	4,778,000	12 Sept. 1979	XG-5-79
	Dunkley Mills Meter Station in British Columbia	20,700	13 Sept. 1979	XG-7-79
	150 Mile House Meter Station in British Columbia	18,400	13 Sept. 1979	XG-8-79
	Sulphur recovery unit added to McMahon Plant in British Columbia	12,314,000	10 Oct. 1979	XG-9-79

APPENDIX G-III

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE PROPANE AND BUTANES IN 1979.

TYPE OF LICENCE	LICENSEE	LICENCE NUMBER	POINT OF EXPORT	TERM OF LICENCE		MAXIMUM		
				FROM	TO	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	TERM 10 ⁶ m ³
New Natural Gas Export Licences	1. Canadian-Montana Pipe Line Company	GL-52	Aden, Alta.	80-01-01	80-12-31	1 416.4	283.3	1 841.4
				81-01-01	84-12-31	1 416.4	283.3	
				85-01-01	85-12-31	1 062.3	212.5	
				86-01-01	86-12-31	708.2	141.6	
				87-01-01	87-12-31	354.1	70.8	
	2. Canadian-Montana Pipe Line Company	GL-53	Cardston, Alta.	86-07-01	86-10-31	340.0	34.5	86.2
				86-11-01	87-10-31	170.0	51.7	
	3. Columbia Gas Development of Canada Ltd.	GL-54	Huntingdon, B.C.	80-01-01	80-12-31	1 110.4	368.3	2 394.0
				81-01-01	84-12-31	1 110.4	368.3	
				85-01-01	85-12-31	832.8	276.2	
				86-01-01	86-12-31	555.2	184.2	
				87-01-01	87-12-31	277.6	92.1	
	4. Niagara Gas Transmission Limited	GL-55	Cornwall, Ont.	80-01-01	80-10-31	350.0	89.1	717.5
				80-11-01	84-10-31	350.0	89.1	
				84-11-01	85-10-31	262.5	66.8	
				85-11-01	86-10-31	600.0	136.8	
				86-11-01	87-10-31	300.0	68.4	
	5. ProGas Limited	GL-56	Emerson, Man.	80-11-01	84-10-31	9 440.9	3 100.0	17 050.0
				84-11-01	85-10-31	7 088.7	2 325.0	
				85-11-01	86-10-31	4 720.4	1 550.0	
				86-11-01	87-10-31	2 360.2	775.0	
	6. Sulpetro Limited	GL-57	Niagara Falls, Ont.	80-01-01	80-10-31	2 089.1	612.8	1 838.4
				80-11-01	82-10-31	2 089.1	612.8	
	7. Pan-Alberta Gas Ltd.	GL-58	Monchy, Sask.	81-11-01	84-10-31	24 928.5	8 294.4	37 324.8
				84-11-01	85-10-31	18 696.4	6 220.8	
				85-11-01	86-10-31	12 464.3	4 147.2	
				86-11-01	87-10-31	6 232.1	2 073.6	
	8. Pan-Alberta Gas Ltd.	GL-59	Kingsgate, B.C.	80-11-01	84-10-31	7 478.6	2 488.3	13 685.7
				84-11-01	85-10-31	5 608.9	1 866.2	
				85-11-01	86-10-31	3 739.3	1 244.2	
				86-11-01	87-10-31	1 869.9	622.1	
	9. TransCanada PipeLines Limited	GL-60	Emerson, Man.	80-01-01	80-10-31	6 317.1(b)	800.0	10 896.4
				80-11-01	84-10-31	6 317.1(b)	2 096.3	
				84-11-01	85-10-31	4 737.8	1 572.2	
				85-11-01	85-12-14	3 158.6	139.0	
	10. Consolidated Natural Gas Limited	GL-61	Emerson, Man.	80-11-01	84-10-31	5 665.6	2 967.9	11 373.6
				84-11-01	85-10-31	4 249.2	1 551.0	
				85-11-01	86-10-31	2 832.8	1 034.0	
				86-11-01	87-10-31	1 416.4	517.0	

APPENDIX G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1979.

TYPE OF LICENCE	LICENSEE	LICENCE NUMBER	POINT OF EXPORT	TERM OF LICENCE		MAXIMUM		
				FROM	TO	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	TERM 10 ⁶ m ³
New Ethane Export Licence	1. Dome Petroleum Limited	GL-51	Windsor, Ont. (c)	79-06-21	79-12-31		1.287	
				80-01-01	80-12-31		1.090	
				81-01-01	81-12-31		.935	
				82-01-01	82-12-31		1.114	
				83-01-01	83-12-31		1.241	
				84-01-01	84-12-31		1.424	
				85-01-01	85-12-31		2.000	
				86-01-01	86-12-31		2.731	
				87-01-01	87-12-31		2.304	
				88-01-01	88-12-31		1.891	
				89-01-01	89-12-31		1.301	
				90-01-01	90-12-31		.765	
				91-01-01	91-12-31		.602	
				92-01-01	92-12-31		.280	
				93-01-01	93-12-31		.104	19.069

-) The quantity of gas that may be exported in any consecutive twelve-month period ending on the 31st day of October under the authority of this licence together with the quantity of gas that may be exported under the authority of Licence GL-25 shall not exceed $206.8 \times 10^6 \text{ m}^3$.
-) During the period ending 81-05-14, the total quantity of gas that may be exported on any one day shall not exceed the difference between $6\ 317.1 \times 10^3 \text{ m}^3$ and the quantity of gas exported under Licence GL-1 on that day.
-) This licence authorizes the export of ethane near Elmore, Saskatchewan, for re-import into Canada and subsequent export near Windsor, Ontario.

APPENDIX G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1979.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	POINT OF EXPORT	TERM OF ORDER		MAXIMUM
				FROM	TO	
New Ethylene Export Orders	1. Esso Chemical Canada	EYL-1-79	Sarnia, Ont.	79-06-07	79-07-31	150 000 kilograms
	2. Esso Chemical Canada	EYL-2-79	Sarnia & Fort Erie, Ont.	79-06-25	81-03-31	18 143 700 kilograms
	3. Dow Chemical of Canada Limited	EYL-3-79	Sarnia, Ont.	79-10-01	79-12-31	2 721 600 kilograms
New Propane Export Orders	1. Amoco Canada Petroleum Co. Ltd.	EPR-915-79	Sarnia, Ont.	79-01-11	79-12-31	7 026 m ³
	2. Dome Petroleum Ltd.	EPR-916-79	Sarnia, Ont.	79-05-28	79-10-15	Same quantity as has been imported.
	3. Dome Petroleum Ltd.	EPR-917-79	Any place on the international boundary between Canada and the U.S.	79-09-06	96-01-31	No maximum export volume so long as the same propane is imported within 30 days.
	4. Amoco Canada Petroleum Co. Ltd.	EPR-918-79	Same as EPR-917-79	79-09-06	96-01-31	Same as EPR-917-79
	5. PanCanadian Gas Products Ltd.	EPR-919-79	Same as EPR-917-79	79-09-06	91-01-31	Same as EPR-917-79
	6. Dome Petroleum Limited	EPR-920-79	Sarnia, Ont.	79-10-04	79-12-31	Same volume as was imported.
New Butanes Export Orders	1. Amoco Canada Petroleum Co. Ltd.	EBU-907-79	Sarnia, Ont.	79-01-11	79-12-31	98 368 m ³
	2. Dome Petroleum Ltd.	EBU-908-79	Sarnia, Ont.	79-05-28	79-10-15	Same volume as was imported.
	3. Dome Petroleum Ltd.	EBU-909-79	Sarnia, Ont.	79-10-04	79-12-31	Same volume as was imported.

PPENDIX G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1979.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	DATE OF ISSUE	COMMENTS
Order Amending Existing Natural Gas Export Licences.	1. TransCanada PipeLines Limited	AO-11-GL-1	79-03-29	Amendment establishing that the price to be received for the gas exported, including all transmission charges, shall be on and after the 1st day of May, 1979, not greater than and not less than the Canadian dollar equivalent of \$2.14367 in United States currency per GJ of gross heating value.
	2. TransCanada PipeLines Limited	AO-12-GL-1	79-07-13	Amendment establishing that the price to be received for the gas exported, including all transmission charges, shall be on and after the 11th day of August, 1979, not greater than and not less than the Canadian dollar equivalent of \$2.61 in United States currency per GJ of gross heating value.
	3. TransCanada PipeLines Limited	AO-13-GL-1	79-10-05	Amendment establishing that the price to be received for the gas exported, including all transmission charges, shall be on and after the 3rd day of November, 1979, not greater than and not less than the Canadian dollar equivalent of \$3.22 in United States currency per GJ of gross heating value.
	4. Alberta and Southern Gas Co. Ltd.	AO-11-GL-3	79-03-29	See Item 1.
	5. Alberta and Southern Gas Co. Ltd.	AO-12-GL-3	79-07-13	See Item 2.
	6. Alberta and Southern Gas Co. Ltd.	AO-13-GL-3	79-10-05	See Item 3.
	7. Alberta and Southern Gas Co. Ltd.	AO-14-GL-3	79-11-09	Amendment, which extends the term of the licence by one year, which varies the maximum daily and annual volumes authorized for export during the period of extension, and which provides for a new term volume.
	8. Westcoast Transmission Company Limited	AO-12-GL-4	79-03-29	See Item 1.
	9. Westcoast Transmission Company Limited	AO-13-GL-4	79-07-13	See Item 2.
	10. Westcoast Transmission Company Limited	AO-14-GL-4	79-10-05	See Item 3.
	11. Westcoast Transmission Company Limited	AO-15-GL-4	79-11-09	Amendment, which extends the term of the licence by six years, which provides for the maximum daily, annual and term volumes authorized for export during each of the periods of extension, and which provides for a new term volume.
	12. Canadian-Montana Pipe Line Company	AO-13-GL-5	79-03-29	See Item 1.
	13. Canadian-Montana Pipe Line Company	AO-14-GL-5	79-07-13	See Item 2.

APPENDIX G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1979.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	DATE OF ISSUE	COMMENTS
Order Amending Existing Natural Gas Export Licences.	14. Canadian-Montana Pipe Line Company	AO-15-GL-5	79-10-05	See Item 3.
	15. Canadian-Montana Pipe Line Company	AO-16-GL-5	79-11-09	Amendment, which extends the term of the licence by one year, which provides for the maximum daily and annual volumes authorized for export during the period of extension, which provides for the new volume authorized for export during the new term of the licence, and which revokes a condition providing for the export of the gas near Aden, Alta. The amendment also provides for the revocation of a condition which varied the annual quantity authorized to be exported so as to permit the licensee to export a greater specified annual quantity each year in a five-year period where such variation had no affect on the total quantity authorized to be exported.
	16. Niagara Gas Transmission Limited	AO-21-GL-6	79-02-01	Amendment, which provides for conversion to SI units.
	17. Niagara Gas Transmission Limited	AO-22-GL-6	79-03-29	See Item 1.
	18. Niagara Gas Transmission Limited	AO-23-GL-6	79-07-13	See Item 2.
	19. Niagara Gas Transmission Limited	AO-24-GL-6	79-10-05	See Item 3.
	20. Alberta and Southern Gas Co. Ltd.	AO-9-GL-16	79-03-29	See Item 1.
	21. Alberta and Southern Gas Co. Ltd.	AO-10-GL-16	79-07-13	See Item 2.
	22. Alberta and Southern Gas Co. Ltd.	AO-11-GL-16	79-10-05	See Item 3.
	23. Canadian-Montana Pipe Line Company	AO-11-GL-17	79-03-29	See Item 1.
	24. Canadian-Montana Pipe Line Company	AO-12-GL-17	79-07-13	See Item 2.
	25. Canadian-Montana Pipe Line Company	AO-13-GL-17	79-10-05	See Item 3.
	26. Canadian-Montana Pipe Line Company	AO-14-GL-17	79-11-09	Amendment, which revokes the condition providing for the export of the gas near Aden, Alta. The amendment also provides for the revocation of a condition which varied the annual quantity authorized to be exported so as to permit the licensee to export a greater specified annual quantity in each year in a five-year period where such variation had no affect on the total quantity authorized to be exported.
	27. TransCanada PipeLines Limited.	AO-15-GL-18	79-02-01	Amendment, which provides for conversion to the SI system of units.

APPENDIX G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1979.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	DATE OF ISSUE	COMMENTS
Order Amending Existing Natural Gas Export Licences.	28. TransCanada PipeLines Limited	AO-16-GL-18	79-03-29	See Item 1.
	29. TransCanada PipeLines Limited	AO-17-GL-18	79-07-13	See Item 2.
	30. TransCanada PipeLines Limited	AO-18-GL-18	79-10-02	Amendment, which provides for the export of the gas at a point near Niagara Falls, Ontario in addition to the existing point of export near Emerson, Manitoba for a sixty-day period and for a daily and total volume specified.
	31. TransCanada PipeLines Limited	AO-19-GL-18	79-10-05	See Item 3.
	32. TransCanada PipeLines Limited	AO-20-GL-18	79-10-18	Amendment, which removes the daily volume limitation on gas exports during the period 79-10-31 to 79-12-31.
	33. TransCanada PipeLines Limited	AO-21-GL-18	79-12-28	Amendment, which removes the daily volume limitation on gas exports during the period 79-12-31 to 80-10-31.
	34. TransCanada PipeLines Limited	AO-13-GL-19	79-03-29	See Item 1.
	35. TransCanada PipeLines Limited	AO-14-GL-19	79-05-03	Amendment, which provides for increases in the daily and annual volumes.
	36. TransCanada PipeLines Limited	AO-14-GL-19	79-07-13	See Item 2.
	37. TransCanada PipeLines Limited	AO-15-GL-19	79-10-05	See Item 3.
	38. TransCanada PipeLines Limited	AO-19-GL-20	79-02-01	Amendment, which provides for the conversion to the SI system of units.
	39. TransCanada PipeLines Limited	AO-20-GL-20	79-03-29	See Item 1.
	40. TransCanada PipeLines Limited	AO-21-GL-20	79-07-13	See Item 2.
	41. TransCanada PipeLines Limited	AO-22-GL-20	79-10-05	See Item 3.
	42. TransCanada PipeLines Limited	AO-23-GL-20	79-10-18	Amendment, which removes the daily volume limitation on gas exports during the period 79-10-31 to 79-12-31.
	43. TransCanada PipeLines Limited	AO-24-GL-20	79-12-28	Amendment, which removes the daily volume limitation on gas exports during the period 79-12-31 to 80-10-31.
	44. Alberta and Southern Gas Co. Ltd.	AO-11-GL-24	79-03-29	See Item 1.
	45. Alberta and Southern Gas Co. Ltd.	AO-12-GL-24	79-07-13	See Item 2.
	46. Alberta and Southern Gas Co. Ltd.	AO-13-GL-24	79-10-05	See Item 3.
	47. Canadian-Montana Pipe Line Company	AO-14-GL-25	79-03-29	See Item 1.

APPENDIX G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1979.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	DATE OF ISSUE	COMMENTS
Order Amending Existing Natural Gas Export Licences.	48. Canadian-Montana Pipe Line Company	AO-15-GL-25	79-07-13	See Item 2.
	49. Canadian-Montana Pipe Line Company	AO-16-GL-25	79-10-05	See Item 3.
	50. Canadian-Montana Pipe Line Company	AO-17-GL-25	79-11-09	Amendment, which revokes a condition providing for the export of gas near Aden, Alta.
	51. I.C.G. Transmission Limited	AO-11-GL-28	79-03-29	See Item 1.
	52. I.C.G. Transmission Limited	AO-12-GL-28	79-07-13	See Item 2.
	53. I.C.G. Transmission Limited	AO-13-GL-28	79-10-05	See Item 3.
	54. I.C.G. Transmission Limited	AO-13-GL-29	79-07-13	Amendment establishing that the price to be received for the gas exported, including all transmission charges, shall be on and after the 11th day of August, 1979, not greater than and not less than the Canadian dollar equivalent of \$2.33 in United States currency per GJ of gross heating value.
	55. I.C.G. Transmission Limited	AO-14-GL-29	79-10-05	Amendment establishing that the price to be received for the gas exported, including all transmission charges, shall be on and after the 3rd day of November, 1979, not greater than and not less than the Canadian dollar equivalent of \$2.94 in United States currency per GJ of gross heating value.
	56. Alberta and Southern Gas Co. Ltd.	AO-8-GL-35	79-03-29	See Item 1.
	57. Alberta and Southern Gas Co. Ltd.	AO-9-GL-35	79-07-13	See Item 2.
	58. Alberta and Southern Gas Co. Ltd.	AO-10-GL-35	79-10-05	See Item 3.
	59. Alberta and Southern Gas Co. Ltd.	AO-11-GL-35	79-11-09	Amendment, which extends the term of the licence by two years, which provides for the maximum daily and annual volumes authorized for export in each of the two periods of extension, and which provides for a new term volume.
	60. Canadian-Montana Pipe Line Company	AO-9-GL-36	79-03-29	See Item 1.
	61. Canadian-Montana Pipe Line Company	AO-10-GL-36	79-07-13	See Item 2.
	62. Canadian-Montana Pipe Line Company	AO-11-GL-36	79-10-05	See Item 3.

PPENDIX G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1979.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	DATE OF ISSUE	COMMENTS
Order Amending Existing Natural Gas Export Licences.	63. Canadian-Montana Pipe Line Company	AO-12-GL-36	79-11-09	Amendment, which extends the term of the licence by two years, which provides for the maximum daily and annual volumes authorized for export in each of the two periods of extension, and which provides for a new term volume. The amendment also revokes a condition providing for the export of gas near Aden, Alta.
	64. TransCanada PipeLines Limited	AO-12-GL-37	79-02-01	Amendment, which provides for the conversion to the SI system of units.
	65. TransCanada PipeLines Limited	AO-13-GL-37	79-03-29	See Item 1.
	66. TransCanada PipeLines Limited	AO-14-GL-37	79-07-13	See Item 2.
	67. TransCanada PipeLines Limited	AO-15-GL-37	79-10-05	See Item 3.
	68. TransCanada PipeLines Limited	AO-16-GL-37	79-10-18	Amendment, which removes the daily volume limitation on gas exports during the period 79-10-31 to 79-12-31.
	69. TransCanada PipeLines Limited	AO-17-GL-37	79-12-28	Amendment, which removes the daily volume limitation on gas exports during the period 79-12-31 to 80-10-31.
	70. TransCanada PipeLines Limited	AO-9-GL-38	79-03-29	See Item 1.
	71. TransCanada PipeLines Limited	AO-10-GL-38	79-07-13	See Item 2.
	72. TransCanada PipeLines Limited	AO-11-GL-38	79-10-05	See Item 3.
	73. TransCanada PipeLines Limited	AO-9-GL-39	79-03-28	See Item 1.
	74. TransCanada PipeLines Limited	AO-10-GL-39	79-07-13	See Item 2.
	75. TransCanada PipeLines Limited	AO-11-GL-39	79-10-05	See Item 3.
	76. Westcoast Transmission Company Limited	AO-19-GL-41	79-03-29	See Item 1.
	77. Westcoast Transmission Company Limited	AO-20-GL-41	79-07-13	See Item 2.
	78. Westcoast Transmission Company Limited	AO-21-GL-41	79-10-05	See Item 3.
	79. Westcoast Transmission Company Limited	AO-22-GL-41	79-11-09	Amendment, which provides for an increase in the maximum daily volume authorized for export during the last nine years of the licence term, and which establishes a new maximum annual volume.

APPENDIX G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1979.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	DATE OF ISSUE	COMMENTS
Order Amending Existing Natural Gas Export Licences.	80. TransCanada PipeLines Limited	AO-10-GL-43	79-01-25	Amendment, which allows some natural gas currently exported for fuel and other uses to be sold in the export market as sales gas and which allows for the use of the fuel gas under this licence to be used in the export of natural gas under Licence GL-18 during the period ending 79-10-31.
	81. TransCanada PipeLines Limited	AO-11-GL-43	79-03-29	See Item 1.
	82. TransCanada PipeLines Limited	AO-12-GL-43	79-07-13	See Item 2.
	83. TransCanada PipeLines Limited	AO-13-GL-43	79-10-05	See Item 3.
	84. TransCanada PipeLines Limited	AO-14-GL-43	79-11-22	Amendment, which extends to 79-12-31 the period during which gas exported under Licence GL-43 may be used as fuel gas for the transport of gas exported under Licence GL-18.
	85. TransCanada PipeLines Limited	AO-15-GL-43	79-12-28	Amendment, which extends to 80-10-31 the period during which gas exported under Licence GL-43 may be used as fuel gas for the transport of gas exported under Licence GL-18.
Orders Amending Existing Propane Export Licences	86. Union Gas Limited	AO-1-GL-50	79-10-25	Amendment, which provides for the exportation and pricing of the gas in accordance with the most recent amendments to the Gas Service and Gas Sales Agreements.
	1. Dome Petroleum Limited	AO-6-GL-31	79-09-06	Amendment, which provides for the separation of the export volumes from the export for import volumes.
	2. Amoco Canada Petroleum Co. Ltd.	AO-4-GL-32	79-09-06	Amendment, which provides for the separation of the export volumes from the export for import volumes.
Orders Amending Existing Ethane Export Orders	3. PanCanadian Gas Products Limited	AO-5-GL-34	79-09-06	Amendment, which provides for the separation of the export volumes from the export for import volumes.
	1. Esso Chemical Canada	AO-4-EYL-1-78	79-04-30	Amendment, which varies the export period.
	1. Dome Petroleum Limited	AO-5-GL-45	79-12-06	Amendment, which provides for additional border crossing points.
Orders Amending Existing Butanes Export Orders	1. Dome Petroleum Limited	AO-3-EBU-1-74	79-10-18	Amendment, which provides for additional border crossing points.

APPENDIX G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1979.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	DATE OF ISSUE	COMMENTS
Orders Amending Existing Natural Gas Export Orders	1. TransCanada PipeLines Limited	AO-1-EO-1-79	79-03-19	Amendment, which provides for the extension of the term of the order to 79-04-26.
	2. TransCanada PipeLines Limited	AO-1-EO-2-79	79-04-05	An amendment establishing that the price to be received for the gas exported including all transmission charges, shall be on and after the 1st day of May, 1979, not greater than and not less than the Canadian dollar equivalent of \$2.14367 in United States currency per GJ of gross heating value.
	3. Western Decalta Petroleum (1977) Limited	AO-3-MO-49-75	79-07-13	An amendment establishing that the price to be received for the gas exported, including all transmission charges, shall be on and after the 11th day of August, 1979, not greater than and not less than the Canadian dollar equivalent of \$2.61 in United States currency per GJ of gross heating value.
	4. Western Decalta Petroleum (1977) Limited	AO-4-MO-49-75	79-10-05	An amendment establishing that the price to be received for the gas exported, including all transmission charges, shall be on and after the 3rd day of November, 1979, not greater than and not less than the Canadian dollar equivalent of \$3.22 in United States currency per GJ of gross heating value.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	POINT OF EXPORT	TERM OF ORDER		MAXIMUM
				FROM	TO	
Orders— Emergency Natural Gas Export	1. TransCanada PipeLines Limited	EO-1-79	Emerson, Man.	79-03-09	79-03-27	84 984 x 10 ³ m ³
	2. TransCanada PipeLines Limited	EO-2-79	Niagara Falls, Ont.	79-03-19	79-05-16	141 639 x 10 ³ m ³
	3. TransCanada(a) PipeLines Limited	EO-3-79	Niagara Falls, Ont.	79-05-25	79-07-31	2 840 x 10 ³ m ³ /d
Orders— Natural Gas Export	1. Canadian-Montana Pipe Line Company	GO-1-79	Cardston, Alta.	79-01-11	79-03-31	34 000 x 10 ³ m ³
	2. Niagara Gas Transmission Limited	GO-2-79	Cornwall, Ont.	79-01-25	79-10-31	56 655.7 x 10 ³ m ³ during the term or 424.9 x 10 ³ m ³ on any one day.
	3. Canadian-Montana Pipe Line Company	GO-3-79 (AO-2)	N/S	79-05-01	93-12-31	30.0 x 10 ³ m ³ /d 10.3 x 10 ⁶ m ³ /a 105.0 x 10 ⁶ m ³ during the term.

This is an import for re-export order. Volumes imported between 79-05-25 and 79-06-25, must be re-exported prior to 79-07-31.

APPENDIX G-IV

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1979

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM		
			TO	FROM	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	TERM 10 ⁶ m ³
NATURAL GAS							
1. TransCanada PipeLines Limited	GL-1 (AO-13)	Emerson, Man.	60-04-11	81-05-14	6 317.1	2 096.3	39 942.3
2. Alberta & Southern Gas Co. Ltd.	GL-3 (AO-14)	Kingsgate, B.C.	61-01-31 86-10-31	86-10-30 87-10-31	12 995.4 3 248.9	4 341.8 1 085.5	109 467.8
3. Westcoast Transmission Company Limited	GL-4 (AO-15)	Kingsgate, B.C.	61-12-10 81-12-10 82-11-01 84-11-01 85-11-01 86-11-01	81-12-09 82-10-31 84-10-31 85-10-31 86-10-31 87-10-31	4 305.8 4 305.8 4 305.8 3 229.4 2 152.9 1 076.5	1 444.7 1 300.0 1 444.7 1 083.5 722.4 361.2	35 250.9
4. Canadian—Montana Pipe Line Company	GL-5 (AO-16)	Cardston, Alta.	61-10-31 86-10-31	86-10-30 87-10-31	1 019.8 255.0	310.2 77.6	7 832.3
5. Niagara Gas Transmission Limited	GL-6 (AO-24)	Cornwall, Ont.	62-09-07	87-06-30	849.8	184.1	3 433.0
6. Alberta & Southern Gas Co. Ltd.	GL-16 (AO-11)	Kingsgate, B.C.	66-11-01 67-11-01	67-10-31 89-10-31	3 204.6 6 409.2	1 059.9 2 119.8	45 721.1
7. Canadian—Montana Pipe Line Company	GL-17 (AO-14)	Cardston, Alta.	66-11-01 67-11-01	67-10-31 89-10-31	339.9 679.9	103.4 206.8	4 652.8
8. TransCanada PipeLines Limited	GL-18 (AO-20)	Emerson, Man.	65-11-22 66-11-01 78-12-07 79-10-18	68-10-31 89-10-31 79-12-31 79-12-16	708.2 4 277.5 (b) 3 400.0	226.6(a) 1 481.5 (c)	33 993.4
9. TransCanada PipeLines Limited	GL-19 (AO-15)	Philipsburg, Que.	65-11-01	89-10-31	600.6	184.1	3 059.4
10. TransCanada PipeLines Limited	GL-20 (AO-23)	Emerson, Man.	68-11-21 78-12-07	91-10-31 79-12-31	2 662.8 (b)	909.3	21 670.8
11. TransCanada PipeLines Limited	GL-21 (AO-7) (d)	Emerson, Man.	68-11-05	91-10-31	N/S	7 019.1	169 967.0
12. Alberta & Southern Gas Co. Ltd.	GL-24 (AO-13)	Kingsgate, B.C.	68-11-01 69-11-01 91-11-01	69-10-31 91-10-31 93-10-31	3 427.7 6 685.4 3 835.6	1 102.0 2 206.7 1 263.4	52 177.0

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1979

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM		
			FROM	TO	DAILY 10 ⁶ m ³	ANNUAL 10 ⁶ m ³	TERM 10 ⁶ m ³
NATURAL GAS							
13. Canadian-Montana Pipe Line Company	GL-25 (AO-17)	Cardston, Man.	68-11-01 69-11-01 91-11-01	69-10-31 91-10-31 93-10-31	339.9 679.8 390.9	103.4 206.8 119.0	
		Aden, Alta.	73-03-27(e) 74-05-14(f) 75-05-14 76-05-14	74-05-14 75-05-14 76-05-14 77-05-14	2 817.5 2 817.5 2 817.5 1 408.7	563.5 563.5 283.3 141.6	4 890.8
14. ICG Transmission Limited	GL-28 (AO-13)	Sprague, Man.	70-11-01	95-10-31	80.3	9.5	229.0
15. ICG Transmission Limited	GL-29 (AO-14)	Fort Frances, Ont.	70-11-01	95-10-31	915.6	218.5	5 462.2
16. ICG Transmission Limited	GL-30 (AO-3) (g)	Sprague, Man.	70-11-01 73-01-09	95-10-31 73-12-31	1 321.8 291.7	344.0 8.6	8 498.1
17. Alberta and Southern Gas Co. Ltd.	GL-35 (AO-11)	Kingsgate, B.C.	70-11-01 85-11-01 86-11-01	85-10-31 86-10-31 87-10-31	5 807.2 2 903.6 1 451.8	1 912.1 956.1 478.1	30 116.1
18. Canadian-Montana Pipe Line Company	GL-36 (AO-12)	Cardston, Alta.	70-11-01 85-11-01 86-11-01	85-10-31 86-10-31 87-10-31	339.9 170.0 85.0	103.4 51.7 25.9	1 628.5
19. TransCanada PipeLines Limited	GL-37 (AO-16)	Emerson, Man.	70-11-01 78-12-07	90-10-31 79-12-31	5 546.6 (b)	2 030.1	40 601.0
20. TransCanada PipeLines Limited	GL-38 (AO-11)	Emerson, Man.	70-11-01	90-10-31	1 416.4	518.4	10 368.0
21. TransCanada PipeLines Limited	GL-39 (AO-11)	Emerson, Man.	70-11-01	90-10-31	204.0	74.6	1 493.0
22. Westcoast Transmission Company Limited	GL-41 (AO-22)	Huntingdon, (h) B.C.	71-11-01 72-11-01 80-11-01	72-10-31 80-10-31 89-10-31	20 773.9 22 922.9 24 622.6	7 223.1 (i) (i)	142 853.3
23. TransCanada PipeLines Limited	GL-42 (AO-3) (d)	Emerson, Man.	71-04-15 71-11-01	71-10-31 94-10-31	N/S N/S	232.8 2 612.3	60 316.5
24. TransCanada PipeLines Limited	GL-43 (AO-15)	Emerson, Man.	71-11-01	91-10-31	N/S	481.6	9 631.5
25. Consolidated Natural Gas Limited	GL-44 (j)	Emerson, Man.	72-03-15	92-10-31	4 249.2	1 274.8	18 951.3

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1979

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM		
			FROM	TO	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	TERM 10 ⁶ m ³
NATURAL GAS							
26. Tenneco LNG Inc.	GL-49	St. Stephen, N.B.	(k)	(l)	32 295.0	11 820.0	(m)
27. Union Gas Limited	GL-50 (AO-1)	Emerson, Man.	78-11-01	83-04-01	(n)	(n)	1 416.
28. Western Decalta Petroleum (1977) Limited	MO-49-75 (AO-4)	Coutts, Alta.	75-11-13	82-06-30	(o)	0.1	N/S
29. Canadian-Montana Pipe Line Company	GL-52	Aden, Alta.	80-01-01	80-12-31	1 416.4	283.3	1 841.
			81-01-01	84-12-31	1 416.4	283.3	
			85-01-01	85-12-31	1 062.3	212.5	
			86-01-01	86-12-31	708.2	141.6	
			87-01-01	87-12-31	354.1	70.8	
30. Canadian-Montana Pipe Line Company	GL-53	Cardston, Alta.	86-07-01	86-10-31	340.0	34.5	86.
			86-11-01	87-10-31	170.0	51.7(p)	
31. Columbia Gas Development of Canada Ltd.	GL-54	Huntingdon, B.C.	80-01-01	80-12-31	1 110.4	368.3	2 394.
			81-01-01	84-12-31	1 110.4	368.3	
			85-01-01	85-12-31	832.8	276.2	
			86-01-01	86-12-31	555.2	184.2	
			87-01-01	87-12-31	277.6	92.1	
32. Niagara Gas Transmission Limited	GL-55	Cornwall, Ont.	80-01-01	80-10-31	350.0	89.1	717.5
			80-11-01	84-10-31	350.0	89.1	
			84-11-01	85-10-31	262.5	66.8	
			85-11-01	86-10-31	600.0	136.8	
			86-11-01	87-10-31	300.0	68.4	
33. ProGas Limited	GL-56	Emerson, Man.	80-11-01	84-10-31	9 440.9	3 100.0	17 050.
			84-11-01	85-10-31	7 088.7	2 325.0	
			85-11-01	86-10-31	4 720.4	1 550.0	
			86-11-01	87-10-31	2 360.2	775.0	
34. Sulpetro Limited	GL-57	Niagara Falls, Ont.	80-01-01	80-10-31	2 089.1	612.8	1 838.4
			80-11-01	82-10-31	2 089.1	612.8	
35. Pan-Alberta Gas Ltd.	GL-58	Monchy, Sask.	81-11-01	84-10-31	24 928.5	8 294.4	37 324.8
			84-11-01	85-10-31	18 696.4	6 220.8	
			85-11-01	86-10-31	12 464.3	4 147.2	
			86-11-01	87-10-31	6 232.1	2 073.6	
36. Pan-Alberta Gas Ltd.	GL-59	Kingsgate, B.C.	80-11-01	84-10-31	7 478.6	2 488.3	13 685.7
			84-11-01	85-10-31	5 608.9	1 866.2	
			85-11-01	86-10-31	3 739.3	1 244.2	
			86-11-01	87-10-31	1 869.9	622.1	

PENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1979

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM		
			FROM	TO	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	TERM 10 ⁶ m ³
NATURAL GAS							
TransCanada PipeLines Limited	GL-60	Emerson, Man.	80-01-01 80-11-01 84-11-01 85-11-01	80-10-31 84-10-31 85-10-31 85-12-14	6 317.1(q) 6 317.1(q) 4 737.8 3 158.6	800.0 2 096.3 1 572.2 139.0	10 896.4
Consolidated Natural Gas Limited	GL-61	Emerson, Man.	80-11-01 84-11-01 85-11-01 86-11-01	84-10-31 85-10-31 86-10-31 87-10-31	5 665.6 4 249.2 2 832.8 1 416.4	2 067.9 1 551.0 1 034.0 517.0	11 373.6
Canadian- Montana Pipe Line Company	GO-3-79 (AO-2)	N/S	79-05-01	93-12-31	30.0	10.3	105.0

interruptible

Daily limitations do not apply during the period 78-12-07 to 79-12-31.

Notwithstanding Emerson, Manitoba as the point of export, the Licensee may export for sixty-day period 119 x 10⁶ m³ of gas at Niagara Falls, Ontario.

This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Samia, Ontario to serve Eastern Canadian markets.

This export actually commenced on the day when the total quantity of gas authorized by Licence GL-8 was exported (approximately June 1973).

This amendment stipulated a maximum daily quantity of 764.9 x 10³ m³ or 12.75 x 10⁶ m³ in any calendar month during the period between 74-05-14 and the commencement of exports authorized for the period 74-05-14 to 75-05-14.

This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

Notwithstanding the Huntingdon, B.C. export point, the Licensee may export gas at a place near Kingsgate, B.C. during the period from 73-11-01 to 79-10-31.

For the period 72-11-01 to 89-10-31, the Licensee is authorized to export an average annual quantity of gas of 7 970.3 x 10⁶ m³ or 8 389.8 x 10⁶ m³ in any consecutive twelve-month period ending on the 31st day of October.

This licence authorizes an export near Emerson, Manitoba. The quantity of gas exported under the authority of this licence shall be equal to the quantities of gas which the Licensee imports pursuant to Licence No. GLI-5.

from the date of Initial Delivery.

Twenty years and six months after the date of the First Regular Delivery or a total term from Initial Delivery not exceeding 25 years.

The total gas or equivalent quantity expressed in cubic metres of the liquified natural gas imported pursuant to Licence GLI-7.

Maximum for winter period, 1 November to 1 April—2 124.6 x 10³ m³ per day or a total of 283.3 x 10⁶ m³ in the period.

The quantity of gas that may be exported in any one month shall not be more than 28.3 x 10³ m³.

The quantity of gas that may be exported in any consecutive twelve-month period ending on the 31st day of October under the authority of this licence together with the quantity of gas that may be exported under the authority of Licence GL-25 shall not exceed 206.8 x 10⁶ m³.

During the period ending 81-05-14, the total quantity of gas that may be exported in any one day shall not exceed the difference between 6 317.1 x 10³ m³ and the quantity of gas exported under Licence GL-1 on that day.

Not Specified

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1979

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUME (m ³)
			FROM	TO	
PROPANE					
1. Dome Petroleum Limited	GL-31 (AO-6)	Any point on the international border between Canada and the United States	79-01-01	79-12-31	716 983
			80-01-01	80-12-31	688 571
			81-01-01	81-12-31	656 190
			82-01-01	82-12-31	620 476
			83-01-01	83-12-31	133 254
			84-01-01	84-12-31	133 254
			85-01-01	85-12-31	133 254
			86-01-01	86-12-31	133 254
			87-01-01	87-12-31	143 809
			88-01-01	88-12-31	193 016
			89-01-01	89-12-31	196 984
			90-01-01	90-12-31	169 047
			91-01-01	91-12-31	165 873
			92-01-01	92-12-31	165 079
			93-01-01	93-12-31	162 098
			94-01-01	94-12-31	103 968
2. Amoco Canada Petroleum Company Limited	GL-32 (AO-4)	Any point on the international border between Canada and the United States	79-01-01	79-12-31	92 698
			80-01-01	80-12-31	92 698
			81-01-01	81-12-31	92 698
			82-01-01	82-12-31	92 698
			83-01-01	83-12-31	92 698
			84-01-01	84-12-31	92 698
			85-01-01	85-12-31	92 698
			86-01-01	86-12-31	92 698
			87-01-01	87-12-31	92 698
			88-01-01	88-12-31	92 698
			89-01-01	89-12-31	92 698
			90-01-01	90-12-31	92 698
			91-01-01	91-12-31	92 698
			92-01-01	92-12-31	92 698
			93-01-01	93-12-31	92 698
			94-01-01	94-12-31	77 206
3. PanCanadian Gas Products Limited	GL-34 (AO-5)	Any point on the international border between Canada and the United States	79-01-01	79-12-31	63 730
			80-01-01	80-12-31	63 730
			81-01-01	81-12-31	63 730
			82-01-01	82-12-31	63 730
			83-01-01	83-12-31	63 730
			84-01-01	84-12-31	63 730
			85-01-01	85-12-31	63 730
			86-01-01	86-12-31	53 175
			87-01-01	87-12-31	3 968
4. Dome Petroleum Limited	GL-46 (AO-3) (a)	Windsor, Ont.	74-04-01	75-03-31	306 349
			75-04-01	76-03-31	406 349
			76-04-01	77-03-31	474 603
			77-04-01	78-03-31	623 809
			78-04-01	79-03-31	619 047
			79-04-01	80-03-31	601 587
			80-04-01	81-03-31	547 619
			81-04-01	82-03-31	468 254
			82-04-01	83-03-31	380 952
			83-04-01	84-03-31	333 333

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1979

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUMES (m ³)
			FROM	TO	
PROPANE					
Dome Petroleum Limited	EPR-908-77 (AO-1)(b)	Gretna, Man.	79-01-01 80-01-01 81-01-01	79-12-31 80-12-31 81-12-31	238 095 238 095 238 095
Imperial Oil Limited	EPR-913-78 (AO-1)(b)	Gretna, Man.	78-04-01 79-01-01 80-01-01	78-12-31 79-12-31 80-08-31	433 888 709 206 440 952
Amoco Canada Petroleum Company Limited	EPR-915-79 (c)	Samia, Ont.	79-01-11	79-12-31	7 026
Dome Petroleum Limited	EPR-917-79 (d)	Any place on the international boundary between Canada and the United States	79-09-06	96-01-31	N/S
Amoco Canada Petroleum Company Limited	EPR-918-79 (d)	Same as EPR-79	79-09-06	96-01-31	N/S
PanCanadian Gas Products Limited	EPR-919-79 (d)	Same as EPR-917-79	79-09-06	91-01-31	N/S
Dome Petroleum Limited	EPR-920-79 (e)	Samia, Ont.	79-10-04	79-12-31	N/S

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1979

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUME (m³)
			FROM	TO	
BUTANES					
1. Dome Petroleum Limited	EBU-1-74 (AO-3) (f)	Any place on the international boundary between Canada and the United States	78-04-01	79-03-31	792 462
			79-04-01	80-03-31	773 405
			80-04-01	81-03-31	689 235
			81-04-01	82-03-31	587 597
			82-04-01	83-03-31	528 837
			83-04-01	84-03-31	433 551
2. Dome Petroleum Limited	EBU-132-74 (AO-1) (b)	Gretna, Man.	79-01-01	79-12-31	603 129
			80-01-01	80-12-31	580 324
			81-01-01	81-12-31	556 375
			82-01-01	82-12-31	532 600
			83-01-01	83-12-31	502 284
			84-01-01	84-12-31	452 037
			85-01-01	85-12-31	437 093
			86-01-01	86-12-31	402 186
			87-01-01	87-12-31	352 812
			88-01-01	88-12-31	341 711
			89-01-01	89-12-31	315 460
			90-01-01	90-12-31	299 627
			91-01-01	91-12-31	290 273
			92-01-01	92-12-31	272 057
			93-01-01	93-12-31	265 117
			94-01-01	94-12-31	245 012
			95-01-01	95-12-31	239 724
3. Amoco Canada Petroleum Company Limited	EBU-133-74 (AO-1) (b)	Gretna, Man.	79-01-01	79-12-31	618 088
			80-01-01	80-12-31	575 893
			81-01-01	81-12-31	540 176
			82-01-01	82-12-31	488 674
			83-01-01	83-12-31	423 848
			84-01-01	84-12-31	374 315
			85-01-01	85-12-31	359 244
			86-01-01	86-12-31	308 345
			87-01-01	87-12-31	260 131
			88-01-01	88-12-31	239 549
			89-01-01	89-12-31	205 008
			90-01-01	90-12-31	179 455
			91-01-01	91-12-31	163 527
			92-01-01	92-12-31	135 973
			93-01-01	93-12-31	122 506
			94-01-01	94-12-31	95 286
			95-01-01	95-12-31	91 062
4. PanCanadian Gas Products Limited	EBU-134-74 (AO-1) (b)	Gretna, Man.	79-01-01	79-12-31	213 822
			80-01-01	80-12-31	213 822
			81-01-01	81-12-31	213 822
			82-01-01	82-12-31	213 822
			83-01-01	83-12-31	213 822
			84-01-01	84-12-31	240 550
			85-01-01	85-12-31	240 550
			86-01-01	86-12-31	240 550
			87-01-01	87-12-31	240 550
			88-01-01	88-12-31	240 550
			89-01-01	89-12-31	240 550
			90-01-01	90-12-31	240 550

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1979

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUMES (m³)
			FROM	TO	
BUTANES					
Imperial Oil Limited	EBU-906-78 (AO-1) (b)	Gretna, Man.	78-04-01 79-01-01 80-01-01	78-12-31 79-12-31 80-12-31	260 448 425 611 264 736
Amoco Canada Petroleum Company Limited	EBU-907-79 (g)	Samia, Ont.	79-01-11	79-12-31	98 368
Dome Petroleum Limited	EBU-909-79 (h)	Samia, Ont.	70-10-04	79-12-31	Same volume that was imported
ETHANE					
Dome Petroleum Limited	GL-45 (AO-5) (i)	Any point on the international boundary between Canada and the United States	74-04-01 75-04-01 76-04-01 77-04-01 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01	75-03-31 76-03-31 77-03-31 78-03-31 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31	289 096 289 096 289 096 306 473 530 325 537 245 547 703 565 080 571 399 549 823
Dome Petroleum Limited	GL-47 (AO-4)	Elmore, Sask. & Windsor, Ont.	78-11-01 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01	78-12-31 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31	835 298 2 211 664 2 195 866 2 053 688 1 563 962 1 405 986 1 184 820 458 130
Dome Petroleum Limited	GO-1-76 (AO-1) (j)	Elmore, Sask.	78-01-01	85-12-31	3 949 Kilos/Year
Dome Petroleum Limited	GL-51	Elmore, Sask.	79-06-21	93-12-31	19 069 000 m³

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1979

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUME (m ³)
			FROM	TO	
ETHYLENE					
1. Dow Chemical of Canada Limited	EYL-1-76 (AO-2)	Elmore, Sask.	80-01-01	89-12-31	158 757 200 Kilos/Year
2. Dow Chemical of Canada Limited	EYL-2-76 (AO-1) (k)	Elmore, Sask.	78-01-01	97-12-31	68 038 800 Kilos/Year
3. Dow Chemical of Canada Limited	EYL-3-79	Samia, Ont.	79-10-01	79-12-31	907 200 Kilos/Month
4. Esso Chemical Canada	EYL-2-79	Samia, and Fort Erie, Ont.	79-06-25	81-03-31	18 143 700 kilograms

(a) This is an import-export licence whereby propane imported at Samia may be exported at Windsor, Ontario.

(b) This order authorizes an export at Gretna, Manitoba for subsequent import at Samia, Ontario.

(c) This order authorizes an export at Samia, Ontario of propane that was previously imported in an NGL mix and fractionated at Amoco's Samia fractionation plant.

(d) This order authorizes an export of propane at any point on the international boundary line between Canada and the United States and subsequent import of the same propane within 30 days after the day of export.

(e) This order authorizes an export at Samia, Ontario of propane that was previously imported at Samia, Ontario in an NGL mix and fractionated at Dome's Samia fractionation plant.

(f) This order authorizes an import at Samia or Windsor, Ontario for subsequent export at any place on the international boundary between Canada and the United States.

(g) This order authorizes an export at Samia, Ontario of butanes that were previously imported at Samia, Ontario in an NGL mix and fractionated at Amoco's Samia fractionation plant.

(h) This order authorizes an export at Samia, Ontario of butanes that were previously imported into Samia, Ontario in an NGL mix and fractionated at Dome's Samia fractionation plant.

(i) This licence authorizes an export at any point on the international boundary between Canada and the United States. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Samia and Windsor, Ontario.

(j) This order authorizes an export of ethane at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

(k) This order authorizes an export of ethylene at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

APPENDIX G-V

EXPORTS OF NATURAL GAS

EXPORTER AND LICENCE / ORDER	MAXIMUM 10 ⁶ m ³										(a) REMAINING UNDER LICENCES
	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	CUMULATIVE TO 74-12-31	1975	1976	1977	1978	1979	CUMULATIVE TO 79-12-31	TOTAL AUTHORIZED EXPORTS	
1. TransCanada PipeLines Limited GL-1 (AO-13) (b)	6 317.1	2 096.3	28 558.6	2 081.7	2 099.2	2 048.7	2 012.6	2 065.3	38 866.0	39 942.3	1 076.2
2. TransCanada PipeLines Limited GL-2 (AO-7) (c)	2 745.0	585.3	1 768.1	—	—	—	—	—	1 768.1	N S	N A
3. Alberta & Southern Gas Co. Ltd. GL-3 (AO-14) (b) 61-10-31/86-10-30 86-10-31/87-10-31	12 995.4 3 248.9	4 341.8 1 085.5	56 614.0	4 290.6	4 483.5	4 469.8	3 975.1	4 625.5	78 458.5	109 467.8	31 009.4
4. Westcoast Transmission Company Limited GL-4 (AO-15) 61-12-10/81-12-09 81-12-10/82-10-31 82-11-01/84-10-31 84-11-01/85-10-31 85-11-01/86-10-31 86-11-01/87-10-31	4 305.8 4 305.8 4 305.8 3 229.4 2 152.9 1 076.5	1 444.7 1 300.0 1 444.7 1 083.5 722.4 361.2	17 004.5	1 368.9	1 316.3	1 370.6	1 118.3	1 183.4	23 362.0	35 250.9	11 888.9
5. Canadian-Montana Pipe Line Company GL-5 (AO-16) (b) (d) (e) 61-10-31/86-10-30 86-10-31/87-10-31	1 019.8 255.0	310.2 77.6	4 085.5	305.3	308.3	220.3	387.1	408.2	5 715.1	7 832.3	2 117.2
6. Niagara Gas Transmission Limited GL-6 (AO-24) 70-12-23/71-12-31 76-11-01/77-10-31	849.8 849.8 849.8	184.1 189.8 170.0	1 493.7	155.7	156.8	168.7	176.5	170.0	2 321.5	3 433.0	1 111.6
7. Canadian-Montana Pipe Line Company GL-8 (AO-1)	2 817.5	563.5	6 232.1	—	—	—	—	—	6 232.1	6 232.1	N A
8. Alberta & Southern Gas Co. Ltd. GL-16 (AO-11) (b) 66-11-01/67-10-31 67-11-01/89-10-31	3 204.6 6 409.2	1 059.9 2 119.8	15 462.7	2 180.8	2 226.8	2 226.4	1 931.8	2 181.3	26 209.8	45 721.1	19 511.4
9. Canadian-Montana Pipe Line Company GL-17 (AO-14) (b) (d) (f) 66-11-01/67-10-31 67-11-01/89-10-31	339.9 679.9	103.4 206.8	1 581.3	203.5	205.6	318.5	192.0	190.1	2 690.9	4 652.8	1 961.9
10. TransCanada PipeLines Limited GL-18 (AO-20) (b) 65-11-22/68-10-31(g) 66-11-01/89-10-31 78-12-07/79-12-31	708.2 4 277.5 N/A	226.6 1 481.5 1 481.5	8 996.3	1 194.9	1 206.1	1 202.8	1 210.8	2 134.1	15 945.1	33 993.4	18 048.3
1. TransCanada PipeLines Limited GL-19 (AO-15)	600.6	184.1	632.6	116.8	115.2	120.8	119.6	128.7	1 233.7	3 059.4	1 825.7
2. TransCanada PipeLines Limited GL-20 (AO-23) (b) 68-11-21/91-10-31 78-12-07/79-12-31	2 662.8 N/A	909.3 909.3	5 217.0	905.8	908.2	907.3	904.2	985.8	9 828.4	21 670.8	11 842.4
3. TransCanada PipeLines Limited GL-21 (AO-7) (h)	N/S	7 019.1	36 694.0	5 956.8	6 189.6	5 964.2	6 013.8	5 608.2	66 426.6	169 967.0	103 540.4
4. TransCanada PipeLines Limited GL-22 (AO-4)	N/S	N/S	73.4	—	—	—	—	—	73.4	85.0	N A
5. Westcoast Transmission Company Limited PC1955-958 (AO-2) (i) 55-06-23/65-12-31 66-01-01/77-10-02	N/S 8 596.1	N/S N/S	38 357.4	—	—	—	—	—	38 357.4	N/A	N A
6. Westcoast Transmission Company Limited GL-23 (AO-7) (i) 66-11-01/67-10-31 67-11-01/68-02-21 68-02-22/88-10-31	2 865.4 2 865.4 5 730.7	1 045.9 696.3 2 097.4	7 283.4	—	—	—	—	—	7 283.4	42 908.7	N A

APPENDIX G-V (cont'd)

EXPORTS OF NATURAL GAS

EXPORTER AND LICENCE / ORDER	MAXIMUM 10 ⁶ m ³										TOTAL AUTHORIZED EXPORTS	REMAIN (UNDE LICENC
	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	CUMULATIVE TO 74-12-31	1975	1976	1977	1978	1979	CUMULATIVE TO 79-12-31			
17. Alberta & Southern Gas Co. Ltd. GL-24 (AO-13) (b) 68-11-01/69-10-31 69-11-01/91-10-31 91-11-01/93-10-31	3 427.7 6 685.4 3 835.6	1 102.0 2 206.7 1 263.4	11 328.0	2 404.7	2 437.2	2 382.4	2 205.8	2 138.2	22 896.3	52 177.0	29 280.0	
18. Canadian-Montana Pipe Line Company GL-25 (AO-17) (b) (d) 68-11-01/69-10-31 69-11-01/91-10-31 91-11-01/93-10-31 73-03-27/75-05-14 75-05-14/76-05-14 76-05-14/77-05-14	339.9 679.9 390.9 2 817.5 2 817.5 1 408.7	103.4 206.8 119.0 563.5 283.3 141.6	2 021.0	584.3	392.7	198.5	144.6	146.3	3 487.4	4 890.8	1 403.0	
19. ICG Transmission Limited GL-28 (AO-13) (b)	80.3	9.5	20.5	11.1	10.4	8.8	9.6	12.1	72.4	229.0	156.0	
20. ICG Transmission Limited GL-29 (AO-14)	915.6	218.5	856.5	193.1	207.9	197.1	180.4	176.6	1 811.5	5 462.2	3 650.0	
21. ICG Transmission Limited GL-30 (AO-3) (j)	1 321.8	344.0	1 191.1	273.5	300.4	310.7	291.2	290.2	2 657.1	8 498.1	5 840.0	
22. Alberta & Southern Gas Co. Ltd. GL-35 (AO-11) (b) 70-11-01/85-10-31 85-11-01/86-10-31 86-11-01/87-10-31	5 807.2 2 903.6 1 451.8	1 912.1 956.1 478.1	7 748.5	1 895.0	1 970.1	1 972.0	1 662.1	2 089.5	17 337.3	30 116.1	12 770.0	
23. Canadian-Montana Pipe Line Company GL-36 (AO-12) (d) 70-11-01/85-10-31 85-11-01/86-10-31 86-11-01/87-10-31	339.9 170.0 85.0	103.4 51.7 25.9	431.4	101.8	102.8	73.4	72.3	73.2	854.8	1 628.5	773.0	
24. TransCanada PipeLines Limited GL-37 (AO-16) (b) 70-11-01/90-10-31 78-12-07/79-12-31	5 546.6 N/A	2 030.1 2 030.1	8 361.7	2 024.5	2 030.1	2 027.9	2 021.1	2 093.4	18 558.7	40 601.0	22 042.0	
25. TransCanada PipeLines Limited GL-38 (AO-11)	1 416.4	518.4	2 135.4	517.0	518.4	517.0	517.0	517.0	4 721.7	10 368.0	5 640.0	
26. TransCanada PipeLines Limited GL-39 (AO-11)	204.0	74.6	308.9	74.4	74.6	74.4	74.4	74.5	681.3	1 493.0	813.0	
27. Westcoast Transmission Company Limited GL-40 (AO-1) (i)	2 149.0	786.7	72.5	—	—	—	—	—	72.5	15 699.3	N/A	
28. Westcoast Transmission Company Limited GL-41 (AO-22) (i) 71-11-01/72-10-31 72-11-01/80-10-31 80-11-01/89-10-31	20 773.9 22 922.9 24 622.6	7 223.1 7 970.3 7 970.3	22 864.3	6 065.5	6 078.9	6 630.8	5 936.9	6 713.9	54 290.3	142 853.3	88 563.0	
29. TransCanada PipeLines Limited GL-42 (AO-3) (h) 71-04-15/71-10-31 71-11-01/94-10-31	N/S N/S	232.8 2 612.3	7 492.6	2 217.0	2 303.6	2 219.7	2 238.2	2 087.2	18 558.2	60 316.5	41 758.0	
30. TransCanada PipeLines Limited GL-43 (AO-15)	N/S	481.6	811.2	147.3	163.8	82.2	108.7	50.5	1 363.6	9 631.5	8 267.0	
31. Consolidated Natural Gas Limited GL-44 (k)	4 249.2	1 274.8	1 430.8	445.5	403.7	380.7	372.3	515.9	3 548.9	18 951.3	15 402.0	
32. Patrick T. Buckley GO-1-68(1)	N/S	0.1	0.7	—	—	—	—	—	0.7	N/S	N/A	
33. Western Decalta Petroleum (1977) Limited MO-49-75 (AO-4)	N/S	0.1	—	—	—	—	—	—	—	N/S	N/A	
34. Union Gas Company of Canada Limited EO-2-63	N/S	N/S	1.6	—	—	—	—	—	1.6	5.7	N/A	
35. TransCanada PipeLines Limited EO-1-70	N/S	N/S	0.7	—	—	—	—	—	0.7	1.1	N/A	

APPENDIX G-V (cont'd)

EXPORTS OF NATURAL GAS

EXPORTER AND LICENCE / ORDER	MAXIMUM 10 ⁶ m ³										(a) REMAINING UNDER LICENCES
	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	CUMULATIVE TO 74-12-31	1975	1976	1977	1978	1979	CUMULATIVE TO 79-12-31	TOTAL AUTHORIZED EXPORTS	
TransCanada PipeLines Limited EO-6-70	N/S	N/S	3.5	—	—	—	—	—	3.5	3.5	N/A
TransCanada PipeLines Limited EO-2-72	N/S	N/A	3.4	—	—	—	—	—	3.4	14.2	N/A
TransCanada PipeLines Limited EO-5-72	1 133.1	N/S	0.6	—	—	—	—	—	0.6	1.1	N/A
Gaz Métropolitain, inc. EO-2-70 (AO-1)	N/A	N/A	4.3	—	—	—	—	—	4.3	5.5	N/A
Gaz Métropolitain, inc. EO-3-70 (AO-1)	N/A	N/A	3.1	—	—	—	—	—	3.1	4.5	N/A
Gaz Métropolitain, inc. EO-5-70 (AO-1)	N/A	N/A	17.4	—	—	—	—	—	17.4	19.1	N/A
Gaz Métropolitain, inc. EO-8-70	N/A	N/A	4.2	—	—	—	—	—	4.2	4.3	N/A
Gaz Métropolitain, inc. EO-2-71	N/A	N/A	13.9	—	—	—	—	—	13.9	20.5	N/A
Gaz Métropolitain, inc. EO-3-71	N/A	N/A	15.2	—	—	—	—	—	15.2	19.7	N/A
Gaz Métropolitain, inc. EO-4-71	N/A	N/A	2.4	—	—	—	—	—	2.4	3.4	N/A
Gaz Métropolitain, inc. EO-7-72	N/A	N/A	7.0	—	—	—	—	—	7.0	15.1	N/A
Gaz Métropolitain, inc. EO-1-73	N/A	N/A	0.3	—	—	—	—	—	0.3	5.4	N/A
Gaz Métropolitain, inc. EO-2-73	N/A	N/A	20.1	—	—	—	—	—	20.1	23.0	N/A
TransCanada PipeLines Limited EO-1-74	4.2	N/A	2.2	—	—	—	—	—	2.2	12.7	N/A
TransCanada PipeLines Limited EO-2-74	N/S	N/A	1.9	—	—	—	—	—	1.9	4.0	N/A
TransCanada PipeLines Limited EO-1-75	N/A	N/A	—	5.9	—	—	—	—	5.9	13.6	N/A
TransCanada PipeLines Limited EO-2-75	N/A	N/A	—	0.1	—	—	—	—	0.1	1.1	N/A
TransCanada PipeLines Limited EO-1-77 (AO-1)	N/A	N/A	—	—	—	849.8	—	—	849.8	849.8	N/A
Gaz Métropolitain, inc. EO-1-77	N/A	N/A	—	—	—	5.6	—	—	5.6	6.1	N/A
Westcoast Transmission Company Limited EO-2-77	N/A	N/A	—	—	—	87.8	—	—	87.8	87.8	N/A
Westcoast Transmission Company Limited EO-3-77	N/A	N/A	—	—	—	24.9	—	—	24.9	34.0	N/A
TransCanada PipeLines Limited EO-4-77 (AO-1)	N/A	N/A	—	—	—	36.8	—	—	36.8	43.5	N/A
Canadian-Montana Pipe Line Company EO-5-77	N/A	N/A	—	—	—	85.0	—	—	85.0	85.0	N/A
TransCanada PipeLines Limited EO-6-77	N/A	N/A	—	—	—	17.0	—	—	17.0	17.0	N/A
Gaz Métropolitain, inc. EO-2-77	N/A	N/A	—	—	—	4.3	—	—	4.3	4.6	N/A
Gaz Métropolitain, inc. EO-3-77 (AO-2)	N/A	N/A	—	—	—	6.3	—	—	6.3	6.9	N/A
Canadian-Montana Pipe Line Company EO-1-79	N/A	N/A	—	—	—	—	—	34.0	34.0	34.0	N/A

APPENDIX G-V (cont'd)

EXPORTS OF NATURAL GAS

EXPORTER AND LICENCE / ORDER	MAXIMUM 10 ⁶ m ³									
	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	CUMULATIVE TO 74-12-31	1975	1976	1977	1978	1979	CUMULATIVE TO 79-12-31	TOTAL AUTHORIZED EXPORTS
63. Niagara Gas Transmission Limited GO-2-79	424.9	N/A	—	—	—	—	—	16.0	16.0	56.7
64. TransCanada PipeLines Limited EO-1-79 (AO-1)	N/A	N/A	—	—	—	—	—	76.1	76.1	85.0
65. TransCanada PipeLines Limited EO-2-79 (AO-1)	N/A	N/A	—	—	—	—	—	60.2	60.2	141.6
66. TransCanada Pipelines Limited EO-3-79	2 840.0	N/A	—	—	—	—	—	—	—	88.0
Gross Exports			297 231.5	35 721.5	36 210.2	37 211.2	33 876.4	36 845.6	477 096.4	
Deduct Re-Exports of Imports:										
Item 31, GL-44 (k)			1 430.8	445.5	403.7	380.7	372.3	515.9	3 548.9	
Item 37, EO-2-72			3.4	—	—	—	—	—	3.4	
Item 38, EO-5-72			0.6	—	—	—	—	—	0.6	
Item 49, EO-1-74			2.2	—	—	—	—	—	2.2	
Item 50, EO-2-74			1.9	—	—	—	—	—	1.9	
Item 51, EO-1-75			—	5.9	—	—	—	—	5.9	
Item 52, EO-2-75			—	0.1	—	—	—	—	0.1	
Item 66, EO-3-79			—	—	—	—	—	—	—	
Deduct Exports for Re-Imports:										
Item 13, GL-21 (h)			36 694.0	5 956.8	6 189.6	5 964.2	6 013.8	5 608.2	66 426.6	
Item 21, GL-30 (i)			1 191.1	273.5	300.4	310.7	291.2	290.2	2 657.1	
Item 29, GL-42 (h)			7 492.6	2 217.0	2 303.6	2 219.7	2 238.2	2 087.2	18 558.2	
Item 34, EO-2-63			1.6	—	—	—	—	—	1.6	
Net Exports			250 413.3	26 822.8	27 012.8	28 336.0	24 960.9	28 344.0	385 889.8	

- (a) It may not be possible to export volumes remaining under these licences due to restrictions on peak day and annual volumes.
- (b) Licences which show actual exports which exceeded the annual maximum were operating under make-up conditions which permitted the recovery of accumulated shortfalls in previous periods, and which permitted tolerance and/or temporary operating allowances.
- (c) This licence authorized an export of 849.8 x 10⁶ m³ in the period 1970-11-01 to 1972-03-31 and an additional export of 424.9 x 10⁶ m³ on an interruptible basis in the year commencing 1 November 1970.
- (d) Licences GL-5, GL-17, GL-25 and GL-36 authorized the licence volumes to be exported at Aden, Alberta (in addition to Cardston, Alberta) under the four licences combined, to a maximum of 2 817.5 x 10⁶ m³/d, or 563.5 x 10⁶ m³/a for any consecutive 12-month period ending on October 31st during the period 1976-05-11 to 1979-12-31.

- (e) This licence authorized an additional 84 983.5 x 10³ m³/a for any consecutive 12-month period commencing on May 14th, during the period 1977-05-14 to 1979-12-31.
- (f) This licence authorized an additional 56 655.7 x 10³ m³/a for any consecutive 12-month period commencing on May 14th, during the period 1977-05-14 to 1979-12-31.
- (g) Interruptible.
- (h) This is an export at Emerson, Manitoba for re-import at Sault Ste. Marie and Samia, Ontario to serve the Eastern Canadian market.
- (i) On the day that the first delivery of gas was made under Licence GL-41, Licences PC1955-958, GL-23 and GL-40 were revoked.

- (j) This is an export at Sprague, Manitoba for re-import River, Ontario.
- (k) This is a re-export at Emerson, Manitoba of the volume imported under Licence GLJ-5 at Willow Creek, Saskatchewan.
- (l) Formerly Licence GL-7.
- Figures may not total due to rounding.
- Amount too small to be expressed.
N/S Not stated.
N/A Not applicable.

APPENDIX G-VI

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS AND ETHANE IN 1979.

TYPE OF LICENCE OR ORDER	LICENCEE	ORDER NUMBER	POINT OF IMPORT	TERM OF ORDER		MAXIMUM
				FROM	TO	
Order—Natural Gas Import	1. TransCanada PipeLines Limited (a)	EO-3-79	Niagara Falls, Ontario.	79-05-25	79-07-31	2 840 x 10 ³ m ³ /d

TYPE OF LICENCE OR ORDER	LICENSEE	ORDER NUMBER	DATE OF ISSUE	COMMENTS
Order Amending Existing Ethane Import Licence	1. Dome Petroleum Limited	AO-5-GL-45	79-10-18	An amendment which provides for the inclusion of Windsor, Ontario as a point of import and which provides for the export at any place on the international boundary.

This is an import for re-export order. Volumes imported between 79-05-25 and 79-06-25 must be returned prior to 79-07-31.

APPENDIX G-VII

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1979.

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUME		
			FROM	TO	DAILY 10 ³ M ³	ANNUAL 10 ⁶ M ³	TERM 10 ⁶ m ³
Natural Gas							
1. TransCanada PipeLines Limited	GL-21 (AO-7) ^(a)	Sault Ste. Marie and Sarnia, Ont.	68-11-05	91-10-31	N/S	7 019.1	169 967.0
2. ICG Transmission Limited	GL-30 (AO-3) ^(b)	Rainy River, Ont.	70-11-01	95-10-31	1 321.8	344.0	8 498.1
3. TransCanada PipeLines Limited	GL-42 (AO-3) ^(a)	Sault Ste. Marie and Sarnia, Ont.	71-04-15 71-11-01	71-10-31 94-10-31	N/S N/S	232.8 2 612.3	60 316.5
4. Consolidate Natural Gas Limited	GLI-5 (AO-2)	N/S	72-03-15	92-10-31	4 249.2	1 274.8	18 951.3
5. Tenneco LNG Inc.	GLI-7	Saint John, N.B.			N/S	418.68 x 10 ⁶ GJ	8 373.6 x 10 ⁶
6. Border Utilities Limited	GO-2-66 (AO-2)	Coutts, Alberta	66-06-02 ^(c)	85-09-14 ^(d)	30.0	N/S	N/S
7. Canadian Western Natural Gas Company Limited	GO-6-66 (AO-3)	Coutts, Alberta	66-09-22	85-09-14	30.0	N/S	N/S

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUME CUBIC METRES
			FROM	TO	
Propane					
1. Dome Petroleum Limited	GL-46 (AO-3) ^(e)	Sarnia, Ontario	78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01	79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31	619 047 601 587 547 619 468 254 380 952 333 333
Butanes					
1. Dome Petroleum Limited	EBU-1-74 (AO-3) ^(f)	Sarnia, Ont. Windsor, Ont.	78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01	79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31	792 462 773 405 689 235 587 597 528 837 433 551
2. Dome Petroleum Limited	EBU-132-74 (AO-1) ^(g)	Sarnia, Ont.	79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01	79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31	603 129 580 324 556 375 532 601 502 284 452 037 437 093 402 186 352 812 341 711 315 460 299 627 290 273 272 057 265 117 245 012 239 724

APPENDIX G-VII (cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1979.

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUME CUBIC METRES
			FROM	TO	
3. Amoco Canada Petroleum Company Limited	(g) EBU-133-74 (AO-1)	Sarnia, Ont.	79-01-01	79-12-31	618 088
			80-01-01	80-12-31	575 893
			81-01-01	81-12-31	540 176
			82-01-01	82-12-31	488 674
			83-01-01	83-12-31	423 848
			84-01-01	84-12-31	374 315
			85-01-01	85-12-31	359 244
			86-01-01	86-12-31	308 345
			87-01-01	87-12-31	260 131
			88-01-01	88-12-31	239 549
			89-01-01	89-12-31	205 008
			90-01-01	90-12-31	179 455
			91-01-01	91-12-31	163 527
			92-01-01	92-12-31	135 973
			93-01-01	93-12-31	122 506
			94-01-01	94-12-31	95 286
			95-01-01	95-12-31	91 062
4. PanCanadian Gas Products Limited	(g) EBU-134-74 (AO-1)	Sarnia, Ont.	79-01-01	79-12-31	213 822
			80-01-01	80-12-31	213 822
			81-01-01	81-12-31	213 822
			82-01-01	82-12-31	213 822
			83-01-01	83-12-31	213 822
			84-01-01	84-12-31	240 550
			85-01-01	85-12-31	240 550
			86-01-01	86-12-31	240 550
			87-01-01	87-12-31	240 550
			88-01-01	88-12-31	240 550
			89-01-01	89-12-31	240 550
			90-01-01	90-12-31	240 550
Ethane 1. Dome Petroleum Limited	(h) GL-45 (AO-5)	Sarnia, Ont. and Windsor, Ont.	74-04-01	75-03-31	289 096
			75-04-01	76-03-31	289 096
			76-04-01	77-03-31	289 096
			77-04-01	78-03-31	306 473
			78-04-01	79-03-31	530 325
			79-04-01	80-03-31	537 245
			80-04-01	81-03-31	547 703
			81-04-01	82-03-31	565 080
			82-04-01	83-03-31	571 399
			83-04-01	84-03-31	549 823
2. Dome Petroleum Limited	(i) GL-1-76 (AO-11)	Windsor, Ont.	78-01-01	85-12-31	3 949 m ³ per year
Ethylene 1. Dow Chemical of Canada Limited	(j) EYL-2-76 (AO-1)	Windsor, Ont.	78-01-01	97-12-31	68 038 860 kilos / yr

This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

From the date of Initial Delivery.

Twenty years and six months after the date of First Regular Delivery and not exceeding 25 years.

This is an import-export licence whereby propane imported at Sarnia may be exported at Windsor, Ontario.

This order authorizes an import at Sarnia or Windsor, Ontario for subsequent export at any point on the international boundary between Canada and the United States.

This order authorizes an export at Gretna, Manitoba for subsequent import at Sarnia, Ontario.

This licence authorizes an export at any point on the international boundary between Canada and the United States. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Sarnia and Windsor, Ontario.

This order authorizes an export of ethane at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

This order authorizes an export of ethylene at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

S Not specified.

APPENDIX G-VIII

IMPORTS OF NATURAL GAS

IMPORTER AND LICENCE / ORDER	MAXIMUM 10 ⁶ m ³										TOTAL AUTHORIZED IMPORTS	(b) REMAINING UNDER LICENCES
	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	CUMULATIVE TO 74-12-31	1975	1976	1977	1978	1979	CUMULATIVE TO 79-12-31			
1. Coutts Gas Company Limited PC1955-1742	N S	3.4	22.6	—	—	—	—	—	22.6	66.3	N/A	
2. Border Utilities Ltd. GO-2-66 (AO-2)	30.0	N S	8.5	1.0	0.8	0.8	1.0	0.9	13.0	N/S	N/A	
3. Canadian Western Natural Gas Company Ltd. GO-6-66 (AO-3)	30.0	N S	16.4	0.9	0.4	—	1.0	1.2	19.9	N/S	N/A	
4. Union Gas Company of Canada Limited PC1956-1848	N S	155.8	2 055.6	—	—	—	—	—	2 055.6	N/S	N/A	
5. Union Gas Company of Canada Limited GLI-1	1 558.0	439.1	3 560.9	287.6	113.5	—	—	—	3 962.1	(b) 4 731.9	N/A	
6. TransCanada PipeLines Limited GLI-2 (AO-2)												
65-11-01/66-11-01	N S	722.4										
66-11-01/67-11-01	N S	861.2										
67-11-01/68-11-01	N S	433.4	2 185.9	—	—	—	—	—	2 185.9	2 450.4	N/A	
68-11-01/69-11-01	N S	288.9										
69-11-01/70-11-01	N S	144.5										
7. Tecumseh Gas Storage Limited GLI-3	566.6	85.0	167.0	—	—	—	—	—	167.0	(b) 167.0	N/A	
8. TransCanada PipeLines Limited GLI-4 (AO-6)	N/S	N/S	2 238.7	—	—	—	—	—	2 238.7	2 331.5	N/A	
9. Consolidated Natural Gas Limited GLI-5 (AO-2)(c)	4 249.2	1 274.8	1 442.9	446.7	415.1	392.3	380.9	528.9	3 606.8	18 951.3	15 344.5	
10. TransCanada PipeLines Limited GL-21 (AO-7) (d)	N/S	7 019.1	36 694.8	5 930.4	6 189.6	5 964.2	6 013.8	5 602.5	66 395.3	169 967.0	103 571.8	
11. ICG Transmission Limited GL-30 (AO-3) (e)	1 321.8	344.0	1 119.1	273.5	300.4	310.7	291.2	290.2	2 657.1	8 498.1	5 840.9	
12. TransCanada PipeLines Limited GL-42 (AO-3) (d)												
71-04-15/71-10-31	N/S	232.8										
71-11-01/94-10-31	N/S	2 612.3	7 502.4	2 207.1	2 303.6	2 219.7	2 238.2	2 085.2	18 556.2	60 316.5	41 760.4	
13. TransCanada PipeLines Limited EO-2-62	N/S	N/S	—	—	—	—	—	—	—	0.1	N/A	
14. TransCanada PipeLines Limited EO-1-63	1 982.9	N/S	5.7	—	—	—	—	—	5.7	28.3	N/A	
15. Union Gas Company of Canada Limited EO-2-63	N S	N S	1.6	—	—	—	—	—	1.6	5.7	N/A	
16. Union Gas Company of Canada Limited EO-3-63	N S	N S	30.7	—	—	—	—	—	30.7	(b) 55.7	N/A	
17. TransCanada PipeLines Limited EO-1-64	3 965.9	N S	71.1	—	—	—	—	—	71.1	70.8	N/A	
18. TransCanada PipeLines Limited EO-2-64 (AO-1)	4 249.2	N S	49.8	—	—	—	—	—	49.8	97.7	N/A	
19. Union Gas Company of Canada Limited EO-2-66 (AO-1)	N S	N S	222.7	—	—	—	—	—	222.7	(b) 222.7	N/A	
20. Union Gas Company of Canada Limited EO-1-67	N S	N S	222.7	—	—	—	—	—	222.7	(b) 222.7	N/A	
21. TransCanada PipeLines Limited EO-2-67	N S	N S	11.0	—	—	—	—	—	11.0	14.2	N/A	
22. Westcoast Transmission Company Limited EO-4-70	N/A	N/A	—	—	—	—	—	—	—	—	N/A	
23. TransCanada PipeLines Limited EO-1-72	2 832.8	N/A	3.4	—	—	—	—	—	3.4	14.2	N/A	
24. TransCanada PipeLines Limited EO-4-72	1 133.1	N/A	0.6	—	—	—	—	—	0.6	1.1	N/A	

APPENDIX G-VIII (cont'd)

IMPORTS OF NATURAL GAS

IMPORTER AND LICENCE / ORDER	MAXIMUM 10 ⁶ m ³										(a) REMAINING UNDER LICENCES
	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	CUMULATIVE TO 74-12-31	1975	1976	1977	1978	1979	CUMULATIVE TO 79-12-31	TOTAL AUTHORIZED IMPORTS	
25. TransCanada PipeLines Limited EO-1-74	4.2	N/A	2.2	—	—	—	—	—	2.2	12.7	N/A
26. TransCanada PipeLines Limited EO-2-74	N/S	N/A	1.9	—	—	—	—	—	1.9	4.0	N/A
27. TransCanada PipeLines Limited EO-1-75	3 399.3	N/A	—	5.9	—	—	—	—	5.9	13.6	N/A
28. TransCanada PipeLines Limited EO-2-75	113.3	N/A	—	0.1	—	—	—	—	0.1	1.1	N/A
29. TransCanada PipeLines Limited EO-3-79	2 840.0	N/A	—	—	—	—	—	—	—	88.0	N/A
Gross Imports			57 710.1	9 153.2	9 323.5	8 887.7	8 926.0	8 508.9	102 509.5		
Deduct Imports for Re-Exports:											
Item 9, GLI-5 (c)			1 442.9	446.7	415.1	392.3	380.9	528.9	3 606.8		
Item 23, EO-1-72			3.4	—	—	—	—	—	3.4		
Item 24, EO-4-72			0.6	—	—	—	—	—	0.6		
Item 25, EO-1-74			2.2	—	—	—	—	—	2.2		
Item 26, EO-2-74			1.9	—	—	—	—	—	1.9		
Item 27, EO-1-75			—	5.9	—	—	—	—	5.9		
Item 28, EO-2-75			—	0.1	—	—	—	—	0.1		
Item 29, EO-3-79			—	—	—	—	—	—	—		
Deduct Re-Imports of Exports:											
Item 10, GL-21(d)			36 694.8	5 930.4	6 189.6	5 964.2	6 013.8	5 602.5	66 395.3		
Item 11, GL-30(e)			1 191.1	273.5	300.4	310.7	291.2	290.2	2 657.1		
Item 12, GL-42(d)			7 502.4	2 207.1	2 303.6	2 219.7	2 238.2	2 085.2	18 556.2		
Item 15, EO-2-63			1.6	—	—	—	—	—	1.6		
Net Imports			10 869.3	289.5	114.8	0.9	1.9	2.1	11 278.4		

(a) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.

(b) Converted from "wet base" to "dry base" for purpose of comparability.

(c) The quantities of gas authorized for import by this licence near Willow Creek, Saskatchewan, are authorized to be exported at Emerson, Manitoba pursuant to Licence QL-44.

(d) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie, Ontario, to serve the Eastern Canadian market.

(e) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario. Figures may not total due to rounding.

N/S Not specified
N/A Not applicable
— Amount too small to be expressed

APPENDIX G-IX

EXPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS* — 1979.

(m³)

EXPORTER	LICENCE OR ORDER NUMBER	PERIOD		AUTHORIZED MAXIMUM EXPORT QUANTITY IN PERIOD	ACTUAL EXPORT IN 1979
		FROM	TO		
A. PROPANE					
1. Dome Petroleum Limited	GL-31 (AO-6)	79-01-01	79-12-31	716 983	716 983
2. Amoco Canada Petroleum Company Limited	GL-32 (AO-4)	79-01-01	79-12-31	92 698	92 698
3. PanCanadian Gas Products Ltd.	GL-34 (AO-5)	79-01-01	79-12-31	63 730	5 158
4. Dome Petroleum Limited	GL-46 (AO-3)	79-04-01	80-03-31	601 587	386 534
5. Dome Petroleum Limited	EPR-908-77 (AO-1)	79-01-01	79-12-31	238 095	123 425
6. Imperial Oil Limited	EPR-913-78 (AO-1)	79-01-01	79-12-31	709 206	474 069
7. Amoco Canada Petroleum Company Limited	EPR-915-79	79-01-11	79-12-31	7 026	—
8. Dome Petroleum Limited	EPR-916-79	79-05-28	79-10-15	1 228	643
9. Dome Petroleum Limited	EPR-917-79	79-09-06	79-12-31	N/A	209 544
10. Amoco Canada Petroleum Company Limited	EPR-918-79	79-09-06	79-12-31	N/A	104 058
11. PanCanadian Gas Products Ltd.	EPR-919-79	79-09-06	79-12-31	N/A	66 613
12. Dome Petroleum Limited	EPR-920-79	79-10-04	79-12-31	N/A	13 442
B. BUTANES					
1. Dome Petroleum Limited	EBU-1-74 (AO-3)	79-04-01	80-03-31	773 405	307 368
2. Dome Petroleum Limited	EBU-132-74 (AO-1)	79-01-01	79-12-31	603 129	437 553
3. Amoco Canada Petroleum Company Limited	EBU-133-74 (AO-1)	79-01-01	79-12-31	618 088	350 918
4. PanCanadian Gas Products Ltd.	EBU-134-74 (AO-1)	79-01-01	79-12-31	213 822	124 212
5. Imperial Oil Limited	EBU-906-78 (AO-1)	79-01-01	79-12-31	425 611	282 032
6. Amoco Canada Petroleum Company Limited	EBU-907-79	79-01-01	79-12-31	98 368	—
7. Dome Petroleum Limited	EBU-908-79	79-05-28	79-10-15	N/A	1 635
8. Dome Petroleum Limited	EBU-909-79	79-10-04	79-12-31	N/A	120
C. ETHANE					
1. Dome Petroleum Limited	GL-45 (AO-5)	79-04-01	80-03-31	537 245	339 566
2. Dome Petroleum Limited	GL-47 (AO-4)	79-01-01	79-12-31	2 211 664	1 928 060
3. Dome Petroleum Limited	GL-51	79-06-21	79-12-31	1 287 000	541 885
D. ETHYLENE					
1. Imperial Oil Limited	EYL-1-78 (AO-4)	79-01-01	79-05-31	960 542 kg	748 895 kg
2. Imperial Oil Limited	EYL-1-79	79-06-07	79-07-31	150 000 kg	—
3. Imperial Oil Limited	EYL-2-79	79-06-25	80-03-31	9 071 850 kg	1 399 133 kg
4. Dow Chemical of Canada Limited	EYL-3-79	79-10-01	79-12-31	2 721 600 kg	625 007 kg
5. Dow Chemical of Canada Limited	EYL-2-76	79-01-01	79-12-31	68 038 860 kg	38 019 460 kg

* See Appendix G-IV for particulars.

APPENDIX G-X

IMPORTS OF PROPANE, BUTANES, ETHANE UNDER LONG TERM LICENCES AND ORDERS* — 1979.

(m³)

IMPORTER	LICENCE OR ORDER NUMBER	PERIOD		AUTHORIZED MAXIMUM IMPORT QUANTITY IN PERIOD	ACTUAL IMPORT IN 1979
		FROM	TO		
A. PROPANE					
1. Dome Petroleum Limited	GL-46 (AO-3)	79-04-01	80-03-31	601 587	458 506
B. BUTANES					
1. Dome Petroleum Limited	EBU-1-74 (AO-2)	79-04-01	80-03-31	773 405	365 304
2. Dome Petroleum Limited	EBU-132-74 (AO-1)	79-01-01	79-12-31	603 129	452 918
3. Amoco Canada Petroleum Company Limited	EBU-133-74 (AO-1)	79-01-01	79-12-31	618 088	346 242
4. PanCanadian Gas Products Ltd.	EBU-134-74 (AO-1)	79-01-01	79-12-31	213 822	124 212
C. ETHANE					
1. Dome Petroleum Limited	GL-45 (AO-5)	79-04-01	80-03-31	537 245	399 453

See Appendix G-VII for particulars.

APPENDIX G-XI

NET EXPORTS OF PROPANE AND BUTANES

A) PROPANE (m³)

EXPORTER	1977	1978 (REVISED)	1979
Amoco Canada Petroleum Co. Ltd.	489 639	465 023	615 813
Big Horn Supply Ltd.	19 974	29 193	35 736
Burnwell Gas of Canada Ltd.	19 778	15 749	28 389
Canadian Enterprise Gas Products Ltd.	108 551	70 708	102 576
Canadian Propane Gas & Oil Ltd.	7 599	5 808	4 646
Canadian Superior Oil Ltd.	98 421	72 865	118 756
Canmore Oil and Gas Limited	52 758	56 818	91 084
Chevron Standard Ltd.	240 792	177 794	333 531
Cigas Products Ltd.	85 333	22 391	15 855
Columbia Gas Development of Canada Ltd.	45 537	—	—
C.W. Gas Ltd.	—	12	41
Dalco Petroleum Ltd. (a)	21 316	14 259	25 408
Dome Petroleum Limited	1 400 097	1 065 449	913 839
Elgin Petroleum Limited	14 656	2 710	3 259
Esso Resources Canada Limited	313 493	194 330	437 036
Gasbec Inc.	64 756	35 314	37 847
Gas Supply (Minneapolis) Ltd.	1 773	23 632	32 376
Gavan Petroleums Ltd.	2 150	—	—
Goliad Oil & Gas Co. & Goliad Ltd.	9 380	—	—
Gulf Canada Products Company	483 362	439 863	523 152
Home Oil Company Limited	106 535	69 873	87 133
Hudson's Bay Oil and Gas Company Limited	68 222	65 941	75 522
Irving Oil Company	2 291	471	11 914
Koch Hydrocarbons Canada	45 880	15 797	8 172
Mobil Oil Canada Ltd.	123 789	76 919	94 991
N.G.L. Supply Ltd.	89 304	29 695	75 905
Northern Petro Products Ltd.	52 912	4 156	2 939
Northern Raymond Oil Co. Ltd.	—	—	6 310
Northwest LPG Supply Ltd.	2 672	—	—
PanCanadian Gas Products Ltd.	112 692	140 231	225 400
Petro-Canada Exploration Inc. (b)	234 480	183 414	267 463
Petrosol International Ltd.	18 277	—	14 014
Real International Marketing Ltd.	684	214	1 192
G.W. Sample	—	—	698
Shell Canada Resources Limited	44 556	63 037	166 905
Stephens Energy Limited	—	—	5 299
Stillings Canada Petroleum Company	281 470	107 728	98 562
Suncor Inc. (c)	4 752	—	—
Texaco Canada Inc.	19 951	—	68 657
Union Oil Co. of Canada Ltd.	32 126	22 701	33 501
Union Texas of Canada Ltd.	70 720	60 997	57 697
Weskem of Canada Ltd.	8 656	—	—
TOTALS	4 799 334	3 533 092	4 621 618

(a) Prior to September 1979, exports were listed under the name of M-P Petroleum Ltd.

(b) Prior to October 1979, exports were listed under the name of Pacific Petroleums Ltd.

(c) Prior to July 1979, exports were listed under the name of Sunoco Inc.

APPENDIX G-XI (cont'd)

NET EXPORTS OF PROPANE AND BUTANES

B) BUTANES (m³)

EXPORTER	1977	1978 (REVISED)	1979
Amoco Canada Petroleum Co. Ltd.	365 421	331 246	470 883
Belgo Canada Manufacturing Co. Ltd.	—	—	3
Big Horn Supply Ltd.	4 095	11 008	23 471
Canada Cities Service	—	—	1 419
Canadian Enterprise Gas Products Ltd.	45 833	23 195	34 246
Canadian Superior Oil Ltd.	10 590	26 832	56 310
Canmore Oil and Gas Limited	18 373	8 780	11 511
Chevron Standard Ltd.	20 365	4 414	12 942
Cigas Products Ltd.	25 818	19 366	4 269
Columbia Gas Development of Canada Ltd.	28 605	—	—
Dalco Petroleum Ltd. (a)	12 233	13 820	38 156
Dome Petroleum Limited	531 030	538 567	419 964
Elgin Petroleum Limited	—	1 077	31 684
Esso Resources Canada Limited	91 751	38 226	122 254
Goliad Oil & Gas Co. & Goliad Ltd.	8 426	—	—
Home Oil Company Limited	25 519	72 219	103 442
Hudson's Bay Oil and Gas Company Limited	309 179	270 042	276 608
Husky Oil Operations Ltd.	42 215	21 945	5 316
Koch Hydrocarbons Canada	219 971	159 377	203 491
Mobil Oil Canada Ltd.	110 520	86 192	86 407
Murphy Oil Company Ltd.	9 614	7 244	14 062
N.G.L. Supply Ltd.	11 121	27 849	67 066
Northern Petro Products Ltd.	2 085	—	1 965
Northern Raymond Oil Co. Ltd.	—	—	3 012
PanCanadian Gas Products Ltd.	46 676	71 344	40 356
Petro-Canada Exploration Inc. (b)	103 231	73 815	96 152
Petrosol International Ltd.	60 572	44 209	101 631
G.W. Sample	—	—	969
Shell Canada Resources Limited	197 096	175 486	214 841
Stephens Energy Limited	—	—	4 734
Stillings Canada Petroleum Company	133 632	66 550	132 348
Suncor Inc. (c)	3 970	46 986	34 860
Texaco Canada Inc.	70 209	71 050	101 206
Union Oil Co. of Canada Ltd.	—	—	10 387
TOTAL	2 508 150	2 211 039	2 725 965

- a) Prior to September 1979, exports were listed under the name of M-P Petroleum Ltd.
b) Prior to October 1979, exports were listed under the name of Pacific Petroleums Ltd.
c) Prior to July 1979, exports were listed under the name of Sunoco Inc.

APPENDIX O-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR OIL PIPELINE ISSUED DURING 1979

APPLICANT	FACILITIES	ESTIMATED COST	HEARD	ISSUED	CERTIFICATE NO.
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NO CERTIFICATES ISSUED DURING 1979

APPENDIX O-II

ORDERS RELATING TO NEW OIL PIPELINE FACILITIES ISSUED DURING 1979 CLASS B CONSTRUCTION

APPLICANT	FACILITIES	ESTIMATED COST	ISSUED	ORDER NO.
Cochin Pipe Lines Ltd.	Approximately 7 km of 273 mm pipeline in Saskatchewan	\$2,315,900	31 Aug. 1979	XO-4-79
Interprovincial Pipe Line Limited	Replacement of approximately 15 km of 864 mm pipeline in Alberta	5,000,000	13 Sept. 1979	XO-7-79
Manito Pipelines Ltd.	Existing pumping unit replaced by 160 horsepower pumping unit at Blackfoot Pump Station in Alberta	71,000	3 Jan. 1979	XO-1-79
	Approximately 17 km of 273 mm pipeline, new Neilburg and Grill Lake Pump Stations, modifications at Lone Rock, Unity and Kerrobert Pump Stations in Saskatchewan	2,399,000	31 Aug. 1979	XO-5-79
Petroleum Transmission Company	Approximately 8 km of 168 mm pipeline in Saskatchewan	650,000	13 Sept. 1979	XO-6-79
Trans-Northern Pipe Line Company	Diesel Pumping Units at Bowmanville and Deseronto Pump Stations in Ontario	355,000	5 July 1979	XO-2-79
	Approximately 17 km of 406 mm pipeline, modifications at Oakville Pump and Meter Station and at Clarkson Junction in Ontario	4,450,000	5 July 1979	XO-3-79
	New Castleton Pump Station, modifications at Deseronto Pump Station and deactivation of Brighton Pump Station in Ontario	1,000,000	3 Oct. 1979	XO-8-79

APPENDIX O-III

EXPORTS OF CANADIAN CRUDE OIL AND EQUIVALENT TO THE UNITED STATES 1979 AND 1978

COMPANY	DESTINATION	1979		1978	
		TOTAL CUBIC METRE FOR YEAR	DAILY AVERAGE	TOTAL CUBIC METRE FOR YEAR	DAILY AVERAGE
Districts I-IV					
Kaiser Petroleum Ltd. (1)	N.Tonawanda, New York	96 818.3	265.3	156 244.9	428.1
Kaiser Petroleum Ltd.	Canton, Ohio	32 194.0	88.2	—	—
Kaiser Petroleum Ltd.	Findlay, Ohio	225 806.8	618.6	388 254.5	1 063.7
Kaiser Petroleum Ltd.	St. Paul, Minnesota	858 417.4	2 351.8	897 615.0	2 459.2
Canadian Hydrocarbons Ltd.	Cut Bank, Montana	1 348.6	3.7	1 291.9	3.5
Cliffs Fuel Service Co.	Rapid River, Michigan	4 053.6	11.1	14 614.2	40.3
Continental Oil Company	Billings, Montana	619 682.3	1 697.8	867 589.3	2 376.9
Continental Oil Company	Wrenshall, Minnesota	403 593.0	1 105.7	464 037.4	1 271.3
Consumers Power Company	Bay City, Michigan	17 940.7	49.2	83 008.1	227.4
Consumers Power Company	Marysville, Michigan	21 824.6	59.8	173 644.5	475.7
Exxon Corp.	Billings, Montana	357 822.3	980.3	443 963.5	1 216.3
Farmers Union Central Exchange	Laurel, Montana	301 226.7	825.3	375 060.7	1 027.5
Koch Refining Co.	Pine Bend, Minnesota	465 547.4	12 754.7	4 269 706.0	11 697.8
Laketon Asphalt Refining Inc.	Laketon, Michigan	25 066.8	68.7	—	—
Marathon Oil Co.	Detroit, Michigan	381.0	1.0	—	—
Mobil Oil Corp.	Joliet, Illinois	359 041.9	983.7	686 133.0	1 879.8
Murphy Oil Corporation	Superior, Wisconsin	894 706.2	2 451.2	993 632.3	2 722.3
Standard Oil Company (Ohio)	Toledo, Ohio	142 502.1	390.4	169 371.8	464.0
Total Petroleum Inc.	Alma, Michigan	—	—	67 032.7	183.7
Union Oil Co. of California	Lemont, Illinois	96 903.4	265.5	25 939.2	71.1
United Refining Co.	Warren, Pennsylvania	—	—	20 273.1	55.5
Other		28.3	0.1	239.2	0.7
TOTAL DISTRICTS I-IV		9 114 832.1	24 972.1	10 097 651.3	27 664.8

(1) Formerly Ashland Oil Co.

APPENDIX O-IV

LICENCES ISSUED FOR EXPORTS OF CRUDE OIL AND CONDENSATE TO U.S.—1979

EXPORTER	CUBIC METRES	
	CRUDE	CONDENSATE
Dome Petroleum Ltd.		23 274.8
Great Canadian Oil Sands Ltd.	3.2	
Gulf Canada Products Company	105 458.3	
Hudson's Bay Oil & Gas Co. Ltd.	886 216.5	463 694.4
Husky Oil Operations Ltd.	43 113.0	
Imperial Oil Ltd.	410 236.0	97 387.5
Kaiser Petroleum Ltd.	1 178 480.9	60 531.7
Koch Oil Company Ltd.	4 506 214.9	
Mobil Oil Canada Ltd.	334 875.9	
Murphy Oil Company Ltd.	894 117.5	
Petro Canada Ltd.	23.9	
Petrosar Ltd.	1.5	1.0
Phillips Petroleum Ltd.	2.0	
Suncor Inc.	2.0	
Union Oil Company of Canada Ltd.	97 339.0	
Total Licences Issued in 1979	8 456 084.6	644 889.4

APPENDIX O-V

EXPORT CHARGES IN 1979 FOR CRUDE OIL AND REFINED PETROLEUM PRODUCTS

(\$ PER CUBIC METRE)

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY ⁽¹⁾	AUG.	SEPT.	OCT.	NOV.	DEC.
Light & Medium Crude Oil	38.70	42.50	44.05	50.35	62.95	62.95	81.85	94.45	100.75	100.75	100.75	119.65
Designated Heavy Crude Oils	31.15	34.30	35.85	39.00	42.15	48.45	61.05	83.05	92.50	92.50	105.10	109.80
Lloydminster Type Blends	28.30	31.45	33.00	36.20	39.35	45.65	58.25	80.25	89.70	89.70	102.30	107.00
Condensate	38.70	42.50	44.05	50.35	62.95	62.95	81.85	94.45	100.75	100.75	100.75	119.65
Motor Gasoline	28.30	29.90	34.60	36.20	39.35	50.35	58.20	61.35	65.15	79.30	83.40	94.40
Middle Distillates	20.45	23.60	28.30	28.30	34.60	47.20	58.20	64.50	69.85	82.45	92.85	96.00
Heavy Fuel Oil	17.00	21.70	28.00	35.85	39.00	39.00	47.20	47.20	57.25	60.40	62.90	65.15
Partially Processed Oil	36.50	40.25	41.85	48.15	60.75	60.75	79.60	92.35	97.55	97.55	95.35	95.35

(1) Reduction of \$6.30 per cubic metre applicable in respect of volumes of crude oil and equivalent exported in July which entered exporting pipeline systems after July 1, 1979.

APPENDIX O-VI

EXPORTS OF LICENSED PETROLEUM PRODUCTS—1979

(m³)

MONTH	PARTIALLY PROCESSED OIL	MOTOR GASOLINE	HEAVY FUEL OIL	MIDDLE DISTILLATE	TOTAL
January	38 412.3	129 507.7	157 518.4	334 986.7	660 425.1
February	53 437.9	109 233.8	205 548.7	198 691.6	566 912.0
March	65 184.9	118 515.2	189 692.8	226 801.9	600 194.8
April	43 457.4	109 382.8	351 397.2	192 998.9	697 236.3
May	40 947.6	115 551.0	339 133.6	296 930.1	792 562.3
June	94 280.5	46 009.0	292 747.1	111 367.0	544 403.6
July	33 862.7	120 701.9	291 434.6	294 971.6	740 970.8
August	41 766.1	13 631.5	435 686.9	187 924.1	679 008.6
September	20 612.5	13 997.1	413 217.9	81 838.7	529 666.2
October	38 906.2	513.1	362 627.8	123 511.1	525 558.2
November	26 726.7	25 547.8	371 874.0	138 959.5	563 108.0
December	44 377.1	56 875.6	148 175.8	75 163.9	324 592.4
TOTAL	541 971.9	859 466.5	3 559 054.8	2 264 145.1	7 244 638.3

APPENDIX O-VII

EXCHANGES OF CRUDE OIL AND EQUIVALENT WITH THE U.S. VIA MID-CONTINENT PIPELINE SYSTEMS 1979

LICENCE HOLDER	EXCHANGE PARTNER	QUANTITY IN CUBIC METRES		
		LICENSED	EXPORTED	IMPORTED
BP Oil Ltd.	Continental Oil Co.	337 372.1	256 106.0	210 598.9
BP Oil Ltd.	Mobil Oil Corporation	464 176.7	402 619.3	398 429.9
BP Oil Ltd.	Murphy Oil Corporation	690 779.1	518 475.5	548 123.7
BP Oil Ltd.	Phillips Petroleum Co.	168 704.8	135 000.1	131 421.9
Consumers Co-op Refineries Ltd.	Continental Oil Co.	180 676.8	151 318.8	155 739.8
Gulf Canada Products Co.	Ashland Oil Inc.	27 013.7	27 346.2	47 329.8
Gulf Canada Products Co.	Continental Oil Co.	281 651.5	313 591.9	327 365.9
Gulf Canada Products Co.	Farmers Union Central Exchange	49 104.0	49 103.0	32 581.0
Gulf Canada Products Co.	Murphy Oil Corporation	222 691.6	194 020.5	222 532.0
Imperial Oil Ltd.	Dow Chemical Company	59 992.3	73 478.2	73 478.2
Imperial Oil Ltd.	Exxon Corporation	277 874.8	304 288.1	289 628.4
Shell Canada Ltd.	Amoco Production Company	114 420.0	91 229.7	90 894.5
Shell Canada Ltd.	Thunderbird Resources	13 278.4	10 810.2	10 461.3
Shell Canada Ltd.	Continental Oil Co.	420 032.6	414 948.4	429 823.3
Shell Canada Ltd.	Farmers Union Central Exchange	683 980.2	646 346.5	632 383.6
Shell Canada Ltd.	Shell Oil Co.	1 083 920.5	962 311.7	961 395.3
Suncor Inc.	Ashland Oil Inc.	219 880.0	168 592.9	168 362.9
Suncor Inc.	Continental Oil Co.	436 411.6	346 756.0	345 463.4
Suncor Inc.	Total Petroleum Inc.	15 819.3	6 285.5	6 035.6
Texaco Canada Inc.	Exxon Corporation	266 625.2	90 218.9	87 734.1
TOTAL		6 014 405.2	5 162 847.4	5 169 783.5

APPENDIX O-VIII

EASTERN CANADIAN EXCHANGE SHIPMENTS—1979

LICENCE HOLDER	EXCHANGE PARTNER	QUANTITY IN CUBIC METRE		
		LICENSED	EXPORTED	IMPORTED
BP Oil Ltd.	Continental Oil Co.	236 778.0	227 800.0	227 810.9
Ultramar Canada Inc.	Amoco Production Co.	248 694.0	245 791.8	245 810.6
Ultramar Canada Inc.	Exxon Corporation	111 237.0	111 225.7	111 674.0
Ultramar Canada Inc.	Mobile Oil Corporation	116 322.0	116 320.9	—
Ultramar Canada Inc.	Texaco Inc.	158 910.0	158 683.3	158 951.2
Gulf Canada Products Co.	Ashland Oil Inc.	170 828.0	170 663.1	170 942.0
Gulf Canada Products Co.	Continental Oil Co.	79 455.0	77 865.0	77 865.0
Gulf Canada Products Co.	Farmers Union Central Exchange	79 455.0	75 724.6	75 724.6
Gulf Canada Products Co.	TransOcean Gulf Oil Co.	222 476.0	219 514.0	221 438.7
Imperial Oil Ltd.	Clark Oil & Refining Corp.	79 455.0	75 811.3	75 711.5
Petrofina Canada Ltd.	Ashland Oil Inc.	514 870.0	492 935.8	492 963.8
Petrofina Canada Ltd.	Continental Oil Co.	39 727.0	36 443.4	36 447.1
Shell Canada Ltd.	Continental Oil Co.	73 099.0	70 257.7	70 264.7
Shell Canada Ltd.	Shell Oil Co.	292 396.0	273 101.1	273 127.8
Suncor Inc.	Ashland Oil Inc.	133 486.4	131 239.5	133 271.8
Suncor Inc.	Continental Oil Co.	31 782.0	31 784.7	31 784.7
Texaco Canada Inc.	Texaco Inc.	55 619.0	55 669.7	55 669.7
TOTAL		2 644 589.4	2 570 831.6	2 459 458.1

APPENDIX E-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR INTERNATIONAL POWER LINES PURSUANT TO SECTION 44 ISSUED DURING 1979

APPLICANT	FACILITIES	ESTIMATED COST	APPLICATION HEARD	ISSUED	CERTIFICATE NO.
1. The Saskatchewan Power Corporation	One international power line to be designated the Boundary Dam-Tioga line and to extend approximately 15.2 kilometres from Boundary Dam substation to a point on the international boundary southwest of Estevan in the Province of Saskatchewan. This single-circuit line would be built for 230 kV three-phase, 60 hertz operation.	\$ 4,952,000	20-21 Feb. 1979	22 June 1979	EC-III-1

APPENDIX E-II

ORDERS RELATING TO INTERNATIONAL POWER LINES ISSUED DURING 1979

TYPE OF ORDER	APPLICANT	FACILITIES	ISSUED	ORDER NO.
Leaves to abandon and Revocation Orders to Certificates of Public Convenience Pursuant to Subsection 43(3) and 47(3).	1. The New Brunswick Electric Power Commission	Order revoking the Certificate No. EC-4.	3 May 1979	RO-EC-4
	2. Hydro-Québec	Order granting the leave to abandon the operation of the international power line for which Certificate EC-6 was issued and revoking the said Certificate.	3 May 1979	RO-EC-6
Exemption Orders pursuant to Section 40, 41 and 43	1. The Manitoba Hydro-Electric Board	One single-circuit international power line extending from Moose Lake tap-off feeder to the international boundary near Manitoba Provincial Road #525 at SE12-4-17E in the Province of Manitoba. The said line is 12.5 kV three-phase operation.	27 Sept. 1979	EX-1-79
Orders under the International Power Line Regulations	1. Cedars Rapids Transmission Company Limited	Order approving the change in the terminal facilities for the international power line authorized by Certificate No. EC-10.	1 March 1979	AO-1-EC-1
	2. British Columbia Hydro and Power Authority	Order approving the changes in the terminal facilities for the international power line authorized by Certificate No. EC-III-10.	22 March 1979	MO-44-79
	3. The Ontario-Minnesota Pulp & Paper Company	Order approving a change in the name of the Company to Boise Cascade Canada Ltd.	16 August 1979	AO-1-EC-III
	4. The Ontario-Minnesota Pulp & Paper Company	Order approving a change in the name of the company to Boise Cascade Canada Ltd.	16 August 1979	AO-1-EC-2

APPENDIX E-III

LICENCES TO EXPORT ELECTRIC POWER AND ENERGY PURSUANT TO SECTION 82 ISSUED DURING 1979

APPLICANT	CLASS	MEGAWATTS	ANNUAL GIGAWATT-HOURS	TERM		APPLICATION HEARD	ISSUED	LICENCE NO.
				FROM	TO			
1. Saskatchewan Power Corporation	Firm	100	438	81-05-01	86-04-30	20-21 February 1979	24 April 1979	EL-117
	Firm	100	438	81-05-01	01-04-30	20-21 February 1979	24 April 1979	EL-118
	Interruptible		876	81-05-01	01-04-30	20-21 February 1979	24 April 1979	EL-119
	Short-term firm	150	876	81-05-01	01-04-30	20-21 February 1979	24 April 1979	EL-120
2. Dow Chemical of Canada, Limited	Interruptible		438	79-08-09	82-12-31	29-30 May 1979	15 June 1979	EL-121
3. St. Lawrence Power Company	Carrier transfer	40	250	79-07-01	82-06-30	27 March 1979	5 April 1979	EL-114
	Interruptible		150	79-07-01	84-06-30	27 March 1979	5 April 1979	EL-115
	Equichange transfer		150	79-07-01	84-06-30	27 March 1979	5 April 1979	EL-116
4. Fraser Inc.	Firm	60	400	80-01-01	87-12-31	18 September 1979	30 October 1979	EL-122
	Interruptible		50	80-01-01	87-12-31	18 September 1979	30 October 1979	EL-123

APPENDIX E-IV

ORDERS RELATING TO EXPORT OF ELECTRIC POWER AND ENERGY ISSUED DURING 1979

Orders Issued Pursuant to Section 6A Of The Regulations Under Part VI Of The Act

APPLICANT	CLASS	KILOWATTS	ANNUAL KILOWATT HOURS	TERM		ISSUED	ORDER NO.
				FROM	TO		
1. Hydro-Québec	Firm	20	35 000	79-04-15	82-04-14	9 March 1979	ELO-136
2. Hydro-Québec	Firm	75	200 000	79-04-15	82-04-14	9 March 1979	ELO-137
3. Hydro-Québec	Firm	20	100 000	79-04-15	82-04-14	9 March 1979	ELO-138
4. Hydro-Québec	Firm	35	65 000	79-04-15	82-04-14	9 March 1979	ELO-139
5. Hydro-Québec	Firm	65	150 000	79-04-15	82-04-14	9 March 1979	ELO-140
6. Hydro-Québec	Firm	10	10 000	79-04-15	82-04-14	9 March 1979	ELO-141
7. Hydro-Québec	Firm	2	2 000	79-04-15	82-04-14	9 March 1979	ELO-142
8. Hydro-Québec	Firm	57	150 000	79-04-15	82-04-14	9 March 1979	ELO-143

APPENDIX E-IV (cont'd)

ORDERS RELATING TO EXPORT OF ELECTRIC POWER AND ENERGY ISSUED DURING 1979

Orders Issued Pursuant to Section 6A Of The Regulations Under Part VI Of The Act

APPLICANT	CLASS	KILOWATTS	ANNUAL KILOWATT HOURS	TERM		ISSUED	ORDER NO.
				FROM	TO		
9. Ontario Hydro	Firm	44	80 000	79-05-15	82-05-14	1 March 1979	ELO-144
10. The Canadian Transit Company	Firm	100	25 000	79-08-01	82-07-31	21 June 1979	ELO-145
11. The New Brunswick Electric Power Commission	Firm	200	250 000	79-10-21	82-10-20	19 July 1979	ELO-146
12. The New Brunswick Electric Power Commission	Firm	12	30 000	79-10-21	82-10-30	19 July 1979	ELO-147
13. The New Brunswick Electric Power Commission	Firm	50	20 000	79-10-21	82-10-30	19 July 1979	ELO-148
14. The Manitoba Hydro-Electric Board	Firm	900	7 884 000	79-10-01	82-09-30	27 September 1979	ELO-149
15. Cedars Rapids Transmission Co.	Interruptible		20 000 000	80-01-01	82-12-31	18 October 1979	ELO-150
16. British Columbia Hydro and Power Authority	Firm	200	600 000	79-12-01	82-11-30	15 November 1979	ELO-151
17. The Detroit and Windsor Subway Company	Firm	300	1 000 000	80-01-01	82-12-31	13 December 1979	ELO-152

Amending Orders Issued Relative to Electric Power and Energy

APPLICANT	ASSOCIATED LICENCE	ISSUED	ORDER NO.
1. Hydro-Québec	ELO-131	25 January 1979	AO-1-ELO-131
2. Fraser Companies	EL-79	1 March 1979	AO-1-EL-79
3. The Manitoba Hydro-Electric Board	EL-102	3 May 1979	AO-1-EL-102
4. The Manitoba Hydro-Electric Board	EL-90	10 May 1979	AO-2-EL-90
5. The Ontario-Minnesota Pulp & Paper Company	EL-62	16 August 1979	AO-1-EL-62
6. The Ontario-Minnesota Pulp & Paper Company	EL-63	16 August 1979	AO-1-EL-63
7. British Columbia Hydro & Power Authority	EL-85	16 August 1979	AO-1-EL-85
8. British Columbia Hydro & Power Authority	EL-87	16 August 1979	AO-1-EL-87
9. British Columbia Hydro & Power Authority	EL-88	16 August 1979	AO-1-EL-88
10. British Columbia Hydro & Power Authority	EL-89	16 August 1979	AO-1-EL-89
11. Hydro-Québec	ELO-131	23 August 1979	AO-2-ELO-131
12. Canadian Niagara Power Company, Limited	EL-83	6 September 1979	AO-2-EL-83

EXPORTS OF ELECTRIC ENERGY—CALENDAR YEAR 1979

EXPORTER	LICENCE NUMBER	THOUSANDS OF KILOWATT-HOURS					REPORTED DOLLAR VALUE OF EXPORT	
		LICENCE AUTHORIZATION		GROSS ENERGY EXPORTED				
		FIRM	INTER- RUPTIBLE	FIRM	INTER- RUPTIBLE	EXCHANGE ⁽¹⁾	FIRM	INTER- RUPTIBLE
1. Maine and New Brunswick Electrical Power Company, Limited	EL-22 EL-23	250 000	25 000	131 479	—		1 024 242	—
2. Fraser Companies, Limited	EL-79 EL-80	400 000	30 000	292 730	—		10 029 642	—
3. The New Brunswick Electric Power Commission	EL-64 EL-65 AO-4-EL-66 EL-108 EL-109 EL-110 EL-111 EL-112 ELO-146 to ELO-148	3 504 000 876 000 50 000 300 —	976 000 140 000 300 000 140 000 179 000	2 467 310 — 139 411 — 206	886 371 — 139 411 2 396	-338 492 1 292 297 286 -13 408 21 881 1 116	82 782 932 — — 5 743 588 — 9 037	28 675 570 — — 78 201
TOTAL NEW BRUNSWICK				2 891 725	1 028 178	-30 325	93 845 853	34 497 359
4. Cedars Rapids Transmission Company Limited	ELO-129		20 000		—			—
5. Hydro-Québec	EL-96 EL-113 EL-106 EL-107 EL-131 ELO-136 to ELO-143 ELO-132 to ELO-134	3 000 000 15 316 164 300 13 175 712 1 040	10 200 000	3 000 000 5 535 133 413 7 044 360 —	4 513 544	3 043	25 960 332 180 552 2 882 245 214 432 11 860 —	81 197 138
TOTAL QUEBEC				3 146 352	4 513 544	3 043	29 249 421	81 197 138
6. Ontario Hydro	EL-32 EL-94 EL-95 ELO-144	15 000 80	8 000 000 15 000 000	908 12	11 654 230	-198 183 15 496	1 817 405	345 112 125
7. Canadian Niagara Power Company Limited	AO-1-EL-83 EL-84	175 000	200 000	101 185	88 485	12 595	1 770 897	1 332 812
8. Boise Cascade Canada Ltd.	AO-1-EL-62 AO-1-EL-63	297 800	87 600	237 108			5 010 239	
9. The Detroit and Windsor Subway Company	ELO-128	1 000		1 022			—	
10. The Canadian Transit Company	ELO-123	25		24			—	
11. St. Lawrence Power Company	AO-1-EL-77 EL-114 EL-115 EL-116		250 000 250 000 150 000 150 000		40 947 46 272	64 066 33 521 31 365		611 072 698 401
12. Dow Chemical of Canada Ltd.	EL-121		174 000		64 196			1 783 691
TOTAL ONTARIO				340 259	11 894 130	-41 140	6 783 358	349 538 101
13. Manitoba Hydro	EL-90 EL-91 EL-92 EL-93 ELO-130 ELO-149	4 600 000 1 200 000 1 200 000 300 000 15 7 884		302 719 — — 12 —	3 810 182	-32 605	5 598 977 — — 510 —	57 980 999
TOTAL MANITOBA				302 731	3 810 182	32 605	5 599 487	57 980 999
14. British Columbia Hydro and Power Authority	AO-1-EL-85 EL-86 AO-1-EL-87 AO-1-EL-88 AO-1-EL-89 ELO-151	25 000 1 000 000 800 000 2 000 000 600	3 600 000	11 100 236	1 539 691	492 570 385 000	268 421 16 827	51 593 332
15. Cominco Ltd.	EL-20 EL-104 EL-105	50 000	500 000 1 400 000		— 1 013 123	3 780 106 801		27 934 252
16. West Kootenay Power and Light Company	ELO-135	50		30			559	
TOTAL BRITISH COLUMBIA				11 366	2 552 814	988 151	285 907	79 527 584
TOTAL CANADA				6 692 433	23 798 848	887 124	135 764 026	602 741 181

Exchange is no value energy. It includes inadvertent and circulating flows, equilibrium storage adjustment transfers and wheeling or carrier transfer.

APPENDIX E-VI

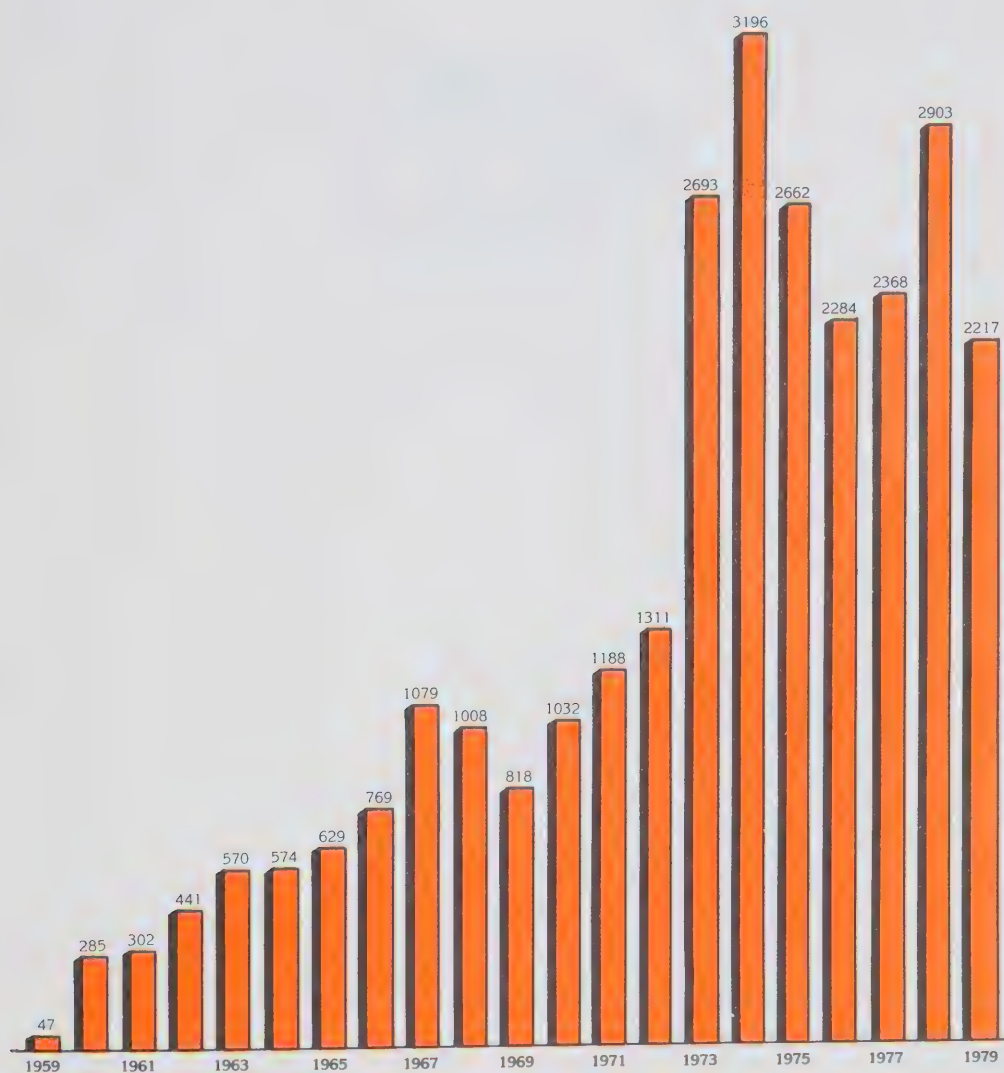
TOTAL CANADIAN ELECTRIC ENERGY SUPPLY AND TRADE WITH THE UNITED STATES— CALENDAR YEAR 1979

CATEGORY	MILLIONS OF KILOWATT-HOURS
Electric Energy Generation for all Canada	353 000 (preliminary)
Electric Energy Importation from U.S.A.	1 792 (preliminary)
Total Canadian Electric Energy Supply	354 792 (preliminary)
Electric Energy Export (Gross) to U.S.A.	6 692 (firm)—1.9 percent Canadian Supply 23 799 (interruptible)—6.7 percent of Canadian Supply 887 (exchange)—0.3 percent of Canadian Supply

APPENDIX S-I

TOTAL NUMBER OF BOARD CERTIFICATES, LICENCES, PERMITS, ORDERS AND AUTHORIZATIONS BETWEEN 1959 AND 1979

The National Energy Board Act was proclaimed on November 2, 1959.

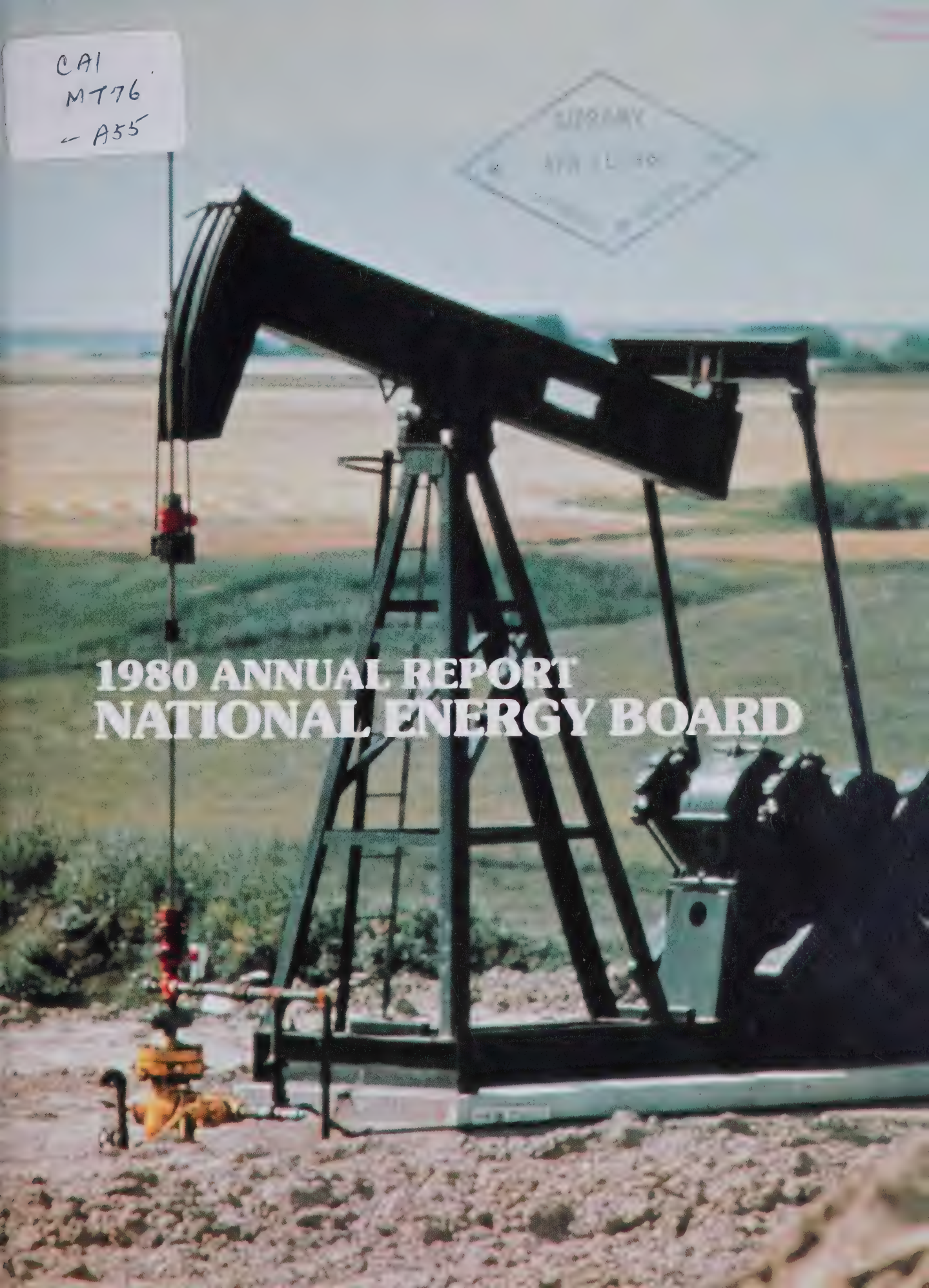




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1980 ANNUAL REPORT NATIONAL ENERGY BOARD



25 March 1981

The Honourable Marc Lalonde, P.C.,
Minister of Energy, Mines and Resources,
Ottawa, Ontario.

Dear Sir:

In accordance with the provisions of Section 91 of the National Energy Board Act, the Revised Statutes of Canada, 1970, chapter N-6, I am pleased to submit the Annual Report of the National Energy Board for the year ended 31 December 1980.

Your sincerely,



C. Geoffrey Edge
Chairman.



Photo: Oil Pump
Carstairs Alberta

Courtesy of National Film Board
Photothèque
Photo by George Hunter

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NOTE ON METRIC CONVERSION

Effective 1 January 1979, the National Energy Board converted to the International System of Units (SI), and accordingly, the data presented in this 1980 Annual Report reflect this change. The following table serves to illustrate the conversion factors and some of the metric terms employed by the Board in this Report.

Approximate Conversion Factor

1 meter (m)	=	3.28 feet
1 kilometre (km)	=	0.62 miles
1 millimetre (mm)	=	0.039 inches
1 cubic metre (m ³)	=	6.3 barrels
1 cubic metre (m ³)	=	35.3 cubic feet
1 litre (L)	=	0.22 gallons
1 kilogram (kg)	=	2.22 pounds
1 gigajoule (GJ)	=	0.95 MMBtu
GJ	=	gigajoule
TJ	=	terajoule
PJ	=	petajoule
EJ	=	exajoule
		10^9 J
		10^{12} J
		10^{15} J
		10^{18} J

FUNCTIONS AND RESPONSIBILITIES OF THE NATIONAL ENERGY BOARD

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal responsibilities: to regulate specific areas of the oil, gas and electrical utility industries in the public interest, and to advise the Government on the development and use of energy resources.

The Board on its own initiative may hold inquiries into a particular aspect of the energy situation and prepare reports for the information of the Government, of Parliament and of the general public.

The Board also carries out studies and prepares reports at the request of the Minister.

The regulatory role of the Board encompasses the following fields:

Certificates of Public Convenience and Necessity in respect of Pipelines and Power Lines

The Board grants certificates to construct and operate interprovincial and international oil and gas and petroleum products pipelines, and international electric power lines. Before permission is granted for construction through a certificate of public convenience and necessity, the Board considers the application at a public hearing.

Pipeline and Power Line Orders

The Board may issue orders approving additions or modifications to existing pipeline systems without calling a public hearing.

Such additions and modifications include sections, branches and extensions of pipeline not more than 40 km in length, and ancillary installations such as tanks, pumps, compressors, meter stations, and communications systems. The Board may also by order authorize international power lines of transfer capacity not exceeding 5 000 kilowatts (kW).

Pipeline Utility Crossings

For reasons of safety, the protection of the environment and of other utility services, no pipeline may cross or be crossed by another utility without authorization. Where a pipeline is to cross a navigable

water or a railway, leave must be obtained from the Minister of Transport or the Canadian Transport Commission respectively. Crossings of the facilities of other utilities may only be made with the authorization of the Board. Authorization is given by Board order after consideration of all the relevant information.

Pipeline Safety

The Board's Oil and Gas Pipeline Regulations seek to provide for the safe design, construction and operation of pipelines under Board jurisdiction. Commencing with the design stage, applications for pipeline construction are reviewed to ensure compliance with the regulations. Pipeline companies are required to have contingency plans developed in co-ordination with local authorities to provide for the safety of the public in the event of line breaks during testing or operation. To ensure high standards in the safety of pipeline construction and operation, the Board carries out inspection programs and conducts investigations and reviews of pipeline system performance.

Environmental Protection

The environmental information requirements for new oil and gas pipelines and for modifications or extensions to existing systems and for international power lines are set forth in the Board's Rules of Practice and Procedure. The Board's assessment of environmental impact takes into consideration diverse concerns such as impact on permafrost soils, erosion and siltation at water crossings of pipelines, impact on wildlife, preservation of archaeological and palaeontological sites of significance, and protection of agricultural soils.

The Board is responsible for ensuring that the environmental protection measures which are implemented by companies are effective. This is accomplished by on-site inspection by Board staff and through follow-up reporting which is required of the companies.

Export Licences and Orders

The National Energy Board Act requires the Board, in considering applications for export licences, to take

into consideration all matters that appear to it to be relevant. It must, among other things, satisfy itself that the quantities of energy involved do not exceed the surplus remaining after allowance has been made for reasonably foreseeable Canadian requirements for that particular form of energy. The Board must also be satisfied that the prices charged for exports are just and reasonable in relation to the public interest.

Regulation of Pipeline Rates, Tolls, Tariffs and Accounting Practices

The Board regulates the rates, tolls and tariffs of pipeline companies under federal jurisdiction to ensure they are just and reasonable and to ensure that there is no unjust discrimination against any person or locality. The rates, tolls, or tariffs allowed reflect, among other things, the capital and operating costs of the pipeline company and the necessity for it to earn an adequate return on its investment so as to be able to attract capital as needed to maintain and extend service.

The Board has established uniform accounting classifications and practices which it requires oil and gas pipeline companies under its jurisdiction to use.

Responsibilities under the Petroleum Administration Act

The Board is required to administer certain provisions of the Petroleum Administration Act; namely the imposition and collection of a charge on the export of crude oil and certain petroleum products and the regulation of the price of natural gas in interprovincial and export trade.

Responsibilities under the Northern Pipeline Act.

The Northern Pipeline Act, passed on 12 April 1978, provides the authority for the construction of a natural gas pipeline in Canada along the Alaska Highway, as well as for the creation of the Northern Pipeline Agency to oversee the construction of the pipeline. Certain terms and conditions in the legislation require the company to seek approval of the Board and the Minister responsible for the Northern Pipeline Act.

The Board's responsibilities relate mainly to financing and tariffs, approval of pipe specifications, granting of leave to open orders and regulation of the operation of the line.

Implementation of Board Decisions

When the Board is prepared to grant a certificate for a pipeline or a power line or to issue a licence for the export of natural gas or electricity, the import of natural gas or the export of oil for a period exceeding one year, it so reports to the Governor in Council through the Minister of Energy, Mines and Resources. If the issuance of a certificate is approved by the Governor in Council, the certificate is then issued by the Board. In the case of an export application, a licence issued by the Board goes into effect as soon as it is approved by the Governor in Council. When the Board refuses an application, the decision is not subject to referral to the Governor in Council. The Board's reports on all such matters are issued as public documents.

Due to the special nature of the trade in crude oil and petroleum products, specifically the use of short-term contracts and the need to make decisions on a daily basis, oil export controls (except for licences for periods in excess of one year) are exercised directly by the Board without reference to the Governor in Council.

Applications for orders authorizing the export of natural gas, ethane, propane, butanes, and ethylene for periods of up to one year are also dealt with by the Board without reference to the Governor in Council. Decisions regarding rates, tolls, and tariffs are made by the Board without reference to the Governor in Council.

Appeals of Board Decisions

The National Energy Board is a Court of Record. With regard to attendance, the swearing and examination of witnesses, the production and inspection of documents, and the enforcement of its orders, it has all the powers vested in a superior court of record.

Under section 17(1) of the National Energy Board Act, the Board may review, rescind or change any order or decision made by it, or may re-hear any

application before deciding it. Under section 17(2) of the Act, the Board may change a certificate or licence issued by it but no such change is effective until approved by the Governor in Council. Parties may apply to the Board, pursuant to these sections of the Act, requesting the Board to review an order, decision, licence or certificate.

A decision or order of the Board may be appealed to the Federal Court of Appeal providing the appeal is based upon a point of law or of jurisdiction. Leave to appeal must be obtained upon application made within one month after the making of the Board's decision or order, or within such further times as that Court, under special circumstances, may allow. Judgments of the Federal Court of Appeal may, with leave, be appealed to the Supreme Court of Canada. The Federal Court of Appeal also has jurisdiction to review and set aside a decision or order of the National Energy Board upon certain stipulated grounds.

The Trial Division of the Federal Court of Canada has exclusive jurisdiction to issue an injunction, writ of certiorari, writ of prohibition, writ of mandamus, writ of quo warranto, or to grant declaratory relief against any federal board, commission or other tribunal.

ORGANIZATION OF THE NATIONAL ENERGY BOARD

The Board is divided into nine separate branches; the following is a brief outline of the responsibilities of each branch.

Administrative Services Branch

Provides administrative support to the Board, including such functions as finance, personnel, official languages, communications, security and office services.

Economics Branch

Advises the Board on general economic and related policy aspects of matters relevant to the Board's responsibilities. More specifically, develops short and long-term forecasts of energy demand and macro-economic projections. Is responsible for energy and economic statistics including supply/demand balances for all sources of energy. Provides economic analyses and advice in relation to projects and rate cases being assessed by the Board, including macro-economic, regional and socio-economic impact assessments, social cost-benefit, commercial viability, economics of the energy industries, Canadian content studies and analyses of escalation rates pertaining to wages, salaries, benefits and material costs. Prepares assessments of the economic implications of federal, provincial and international energy policies, developments and relations.

Electric Power Branch

Advises the Board on all matters concerning electric power including regulatory matters associated with authorizing the construction of international power lines and with licensing exports of power; conducts studies on various aspects of the planning and engineering of electric power systems and power generation.

Energy Resources Branch

Advises on matters of oil and gas exploration, drilling and production. Forecasts trends in oil and gas supply from conventional, oil sands and synthetic sources and independently calculates the reserves and deliverability of gas and the reserves and producibility of oil. Is responsible for the determination of possible surpluses of oil and gas and for the implementation of the Board's protection

policies and procedures relative to exports. The Calgary office of the Energy Resources Branch is engaged in pool-by-pool calculation of gas and oil reserves.

Engineering Branch

Advises the Board on technical, safety and environmental matters relating to the design, construction and operation of oil, product, gas and high vapour pressure pipeline systems including compressor and pump stations, gas processing and LNG plants; inspects and monitors pipeline construction and pipeline operations to ensure compliance with the Act, regulations, Board Orders, and applicable codes and standards; evaluates proposals for the expansion, extension, replacement and repair of pipeline systems; carries out independent studies on the technical feasibility, cost of service, and safety-related aspects of pipelines in conventional, arctic and other offshore areas; investigates oil spills and pipeline breaks; develops environmental and safety-related regulations and guidelines; provides engineering and environmental assessments on applications before the Board; maintains a detailed record system on utility crossings and right-of-way encroachments; advises on landowner and right-of-way matters.

Financial Regulatory Branch

Provides advice on rates, tolls and tariffs, financial and accounting matters. Analyzes and recommends on the financial aspects of construction of oil and gas pipelines including financial feasibility, methods of financing, and the capital structure of applicants. Examines rate structures including methods of rates, tolls and tariff designs of oil and natural gas pipelines. Organizes and conducts field audits of pipeline companies and licensed exporters of oil and gas. Develops uniform accounting regulations for pipeline companies.

Gas Advisory Branch

Acts as the Board's primary advisor on matters affecting natural gas and gas products policy. Provides the staff advice on the pricing of natural gas exports, the administration of Part III of the Petroleum Administration Act which is concerned with domestic natural gas pricing, and the

administration of the propane/butanes export control program. Analyzes and makes recommendations on market and regulatory aspects of natural gas export licence applications as well as those for natural gas pipeline certificates and for rates, tolls and tariffs, provides short-term gas industry and market analysis, and coordinates all matters relative to export controls on ethane and ethylene.

Law Branch

Advises the Board on its statutory powers, prepares regulations and rules of procedure, prepares draft amendments to the Act, examines witnesses at hearings, assists in the preparation and review of submissions to Governor in Council, reasons for decision, orders and certificates and conducts litigation for and on behalf of the Board.

Oil Policy Branch

Acts as the Board's principal staff source of information and advice on national and international matters affecting oil markets and policy. Estimates domestic demand for oil in the short term. Monitors oil flows, inventories and supply for feedstocks and refined oils in Canada. Provides advice and appraisals on oil exports and export prices for the administration and enforcement of Part I of the Petroleum Administration Act and for other regulatory activities.

BOARD MEMBERS

C.G. Edge	Chairman
R.F. Brooks	Vice-Chairman
L.M. Thur	Associate Vice-Chairman
W.A. Scotland	Associate Vice-Chairman (Designated Officer-Northern Pipeline Agency)
J. Farmer	Associate Vice-Chairman
J.R. Jenkins	Member
J.R. Hardie	Member
J.L. Trudel	Member
R.B. Horner	Member
A.B. Gilmour	Member

SECRETARY'S OFFICE

G. Yorke Slader	Secretary
G.G. Michaud	A/Assistant Secretary

DIRECTOR GENERAL

M.E. LeClerc	Director General, Special Projects
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ADMINISTRATIVE SERVICES BRANCH

S.H. Goldstein	A/Director
N. Grace	Assistant Director (Administration)
M.J. McNamara	A/Assistant Director (Finance)
W.D. McKee	A/Assistant Director (Personnel)

COMPUTER SYSTEMS GROUP

D. Emmens	Manager
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ECONOMICS BRANCH

P. Eglington	Director
G.H. Shaw	Assistant Director, Regional Economics & Demand Forecasts
I. Melzer	A/Assistant Director, Econometrics and Economic Analysis

ELECTRIC POWER BRANCH

E.S. Bell	Director
A.N. Karas	Assistant Director, Planning
T. Olszewski	Assistant Director, Operations

ENERGY RESOURCES BRANCH

K.W. Vollman	Director
W.A. Hiles	Assistant Director, Geology and Reserves
K. Poole	Assistant Director, Gas Supply
G.C. Hos	Assistant Director, Oil Supply

ENGINEERING BRANCH

J.R. Eickmeier	Director
R.E. Jackson Jr.	Assistant Director, Gas Pipelines
T.S. Shwed	Assistant Director, Oil Pipelines
G.E. Marquardt	Assistant Director, Right-of-way
P.A. Carr	Assistant Director, Environment

FINANCIAL REGULATORY BRANCH

A. Blair	Director
D.G. Harris	Senior Advisor
K. Kalyan	Assistant Director, Research and Special Studies
G.S. Johnson	Assistant Director, Gas
J.A. Law	Assistant Director, Oil
J.W. Bigelow	Chief Auditor, Northern Pipeline

GAS ADVISORY BRANCH

S.R. Ironstone	Director
P.L. Fournier	Assistant Director

LAW BRANCH

F.H. Lamar	General Counsel
P.G. Griffin	Assistant General Counsel

OIL POLICY BRANCH

P.G. Scotchmer	Director
B.P. Leakey	Assistant Director, Crude Oil
R.B. Stevens	A/Assistant Director, Refined Oil

HIGHLIGHTS OF THE BOARD'S OPERATIONS IN 1980

Public Hearings

During 1980, the Board conducted all or part of 21 public hearings in locations from St. John's, Newfoundland to Victoria, British Columbia, during the course of which it sat for a total of 155 days.

The following is a summary of some of the decisions rendered in 1980 following public hearings.

Northern Pipeline Hearings

By the beginning of 1980, the Board had completed three phases of its four-phase hearing on the financing of the Canadian sections of the Alaska Highway Natural Gas Pipeline System, all of which were reported upon in the 1979 Annual Report.

- On 11 March 1980, the Board issued its Findings on Phase IV(a) which dealt with the feasibility of financing the "prebuild" in Canada and the United States and the financing of the whole mainline.
- Following the release of the Phase IV(a) Findings the Board convened a hearing commencing on 29 April 1980 to provide Foothills Pipe Lines (Yukon) Ltd. with an opportunity to comply with the requirements of the amended condition 12(1) of Schedule III to the Northern Pipeline Act to establish to the satisfaction of the Minister responsible for the Northern Pipeline Act that financing had been obtained for the "prebuild" facilities and could be obtained for the rest of the mainline in Canada.

As a result of the Condition 12 hearing held from 29 April to 7 May, the Board issued a statement indicating that no insurmountable financing issues in Canada had been identified, but that there were four issues, primarily related to United States matters, which had to be resolved.

The four issues related to the need for credit-worthy parties to be willing to pay for the transmission of Alaska gas, to the tracking or flow-through of the tariff in the United States, to the adequacy of the volume of gas to be transmitted in prebuilt facilities, and to the minimum payment for gas imported into the United States authorized by the United States Federal Energy Regulatory Commission instead of the "take and pay" clause in the Pan-Alberta Gas Ltd. contract for the sale of the gas.

In response to a Board request, Foothills (Yukon) then indicated that it was satisfied in relation to all of these matters and was willing to proceed to finance and construct the pipeline.

- On completion of the Phase IV(b) hearing, which had commenced on 5 May 1980, the Board approved a full cost-of-service tariff for the mainline, amended the Incentive Rate of Return Scheme and approved a number of other tariff matters.

As a result of that hearing and the one dealing with condition 12 of the Northern Pipeline Act as well as a related hearing dealing with an application by Pan-Alberta to export additional gas volumes through the system, the Federal Government approved construction of the southern portions (the "prebuild") of the system.

Natural Gas Export Hearings

- In December 1979, as a result of the Licence Phase of the Omnibus Gas Hearing, the Board announced that it had authorized new exports of natural gas to the United States totalling 106.2 billion cubic metres. Approximately 51 billion cubic metres of this total were licensed to Pan-Alberta Gas Ltd. for export through the "prebuild" of the Alaska Highway Natural Gas System.
- In April 1980, the Board authorized an additional 14 billion cubic metres of gas for export by Pan-Alberta through the prebuild. This application had been heard in Ottawa in March 1980 and the Pan-Alberta export licence coupled with the approval by the Board of an amendment to a licence held by Consolidated Natural Gas Company Limited to permit the export of some five billion cubic metres of natural gas through the prebuild, were critical to the Board's determinations in its condition 12 hearing on the financing of the Foothills (Yukon) pipeline.
- The Board issued a licence to Union Gas Limited after a hearing held in Ottawa in September to export by displacement synthetic natural gas, purchased from Petrosar Limited, to Transcontinental Gas Pipe Line Corporation. The total quantity of gas approved for export under the licence, which expires on 31 October 1985, is 1 420 million cubic metres.

Pipeline Facilities Hearings

- The second part of the Omnibus Gas Hearing, the “Certificate Phase”, which ended on 30 January 1980, was held to examine applications by TransCanada PipeLines Limited and by Q & M Pipe Lines Ltd. to extend natural gas pipeline facilities from near Montreal, Quebec to Halifax, Nova Scotia. The Board issued two certificates to TransCanada, the first to extend its pipeline from the end of its existing system at St-Lazare, near Montreal, to Boisbriand; the second to extend the pipeline from Boisbriand to Lévis/Lauzon, near Quebec City.

The Board denied the application of Q & M Pipe Lines Ltd. to construct and operate a natural gas pipeline from Lévis/Lauzon to Halifax because the Applicant failed to provide the necessary environmental and other information.

- In July 1980, the Board approved an application by TransCanada PipeLines Limited for a certificate of public convenience and necessity to construct and operate natural gas pipeline compressor units and looping facilities. This application had been considered at a public hearing held in Ottawa in April.

The Board approved the construction of five 21 MW compressor units in Saskatchewan and Manitoba to reduce the amount of fuel used in TransCanada’s system and two 3 MW compressor units in Ontario, which will enable TransCanada to meet the increasing requirements of customers on its Montreal line.

Also approved were facilities required to transport volumes of gas for export to the United States authorized as a result of the Board’s Omnibus Gas Export Hearing. These facilities consist of 268 km of pipeline loop in Saskatchewan and Manitoba and 207 km of pipeline loop in Manitoba and Ontario, as well as the installation of six compressor units and the relocation of two portable compressor units in Ontario.

- In January 1980, the Board released its Reasons for Decision on an application by Trans Mountain Pipe Line Company Ltd., heard in Vancouver in 1979, for a west-to-east oil pipeline, stating that it was satisfied on all matters related to the construction and

operation of the section of pipeline in Canada for which certification was sought. However, in the absence of any studies on the degree of potential impact of the U.S. part of the project, and the associated tanker traffic, upon the marine and coastal environment in Canada, the Board concluded that there was insufficient evidence before it to assess the acceptability of the environmental risks to Canada and, therefore, was not prepared to issue a certificate at that time.

In its Decision, the Board required Trans Mountain to advise whether it wished to proceed with a rehearing of that part of its application dealing with Canadian marine environment issues. Trans Mountain did so advise the Board and the application was set down for further hearings in Vancouver, commencing in November 1980. These hearings continued into 1981.

- In March, the Board received an application from Interprovincial Pipe Line (NW) Ltd. for a certificate of public convenience and necessity to construct an oil pipeline 866 km in length from Norman Wells, N.W.T. to Zama, Alberta. The Board held a public hearing on the application in Edmonton and Yellowknife in the fall of 1980. A decision will be rendered in 1981.

Electrical Hearings

- Following a public hearing in Vancouver in December 1979 and January 1980, the Board issued five licences to British Columbia Hydro and Power Authority for the export of up to 10 025 gigawatt hours (GW·h) per year of firm and interruptible power and energy to expire 30 September 1984. The Board also issued an order allowing B.C. Hydro to increase the operating voltage of its international power line serving the Point Roberts area in the State of Washington from 12 kV to 25 kV.

- Following a public hearing in Ottawa in January 1980, the Board issued two licences to Canadian Niagara Power Company, Limited for the export of up to 380 GW·h per year of firm and interruptible power and energy to Niagara Mohawk Power Corporation to expire 30 September 1984.

- Following a public hearing in Montreal in June 1980, the Board issued three licences to Hydro-

Québec for the export of up to 845 GW·h per year of firm and interruptible power and energy to utilities in the State of Vermont. The interruptible licences will expire on 30 September 1985 and the firm licence on 31 December 1985.

Rate Hearings

- The Board issued a tariff order to Alberta Natural Gas Company Limited after a hearing in March on the Company's tolls. The Board determined that Alberta Natural's tolls would be of the cost-of-service type and allowed a rate of return after income taxes on rate base of 11.5 percent, effective 1 July 1980. The allowed rate of return provides a 14.25 percent return on a deemed common equity of 40 percent. The Board also directed the Company to revert from normalized income tax to the taxes payable method for toll purposes.

- Interprovincial Pipe Line Limited applied to the Board for an order approving just and reasonable tolls and tariffs. In its Decision following a public hearing held in May, the Board allowed IPL a rate of return on rate base of 9.78 percent on a deemed capital structure having 42.5 percent common equity. The new tolls and tariffs came into effect 1 September 1980.

In accordance with an undertaking given in the Reasons for Decision in this case, the Board issued an Order providing a procedure that may, under certain circumstances, permit tolls to be adjusted without a public hearing, after consideration by the Board of the views of interested parties.

- Following a public hearing held in May and June concerning an application by TransCanada PipeLines Limited for new rates and tolls, the Board issued to TransCanada a tariff order effective 1 September 1980 setting out the new rates and tolls to be charged for Canadian gas sales and transportation services. In its Decision the Board allowed TransCanada a rate of return on rate base of 11.1 percent on a deemed capital structure having a 30 percent common equity component and maintained TransCanada on the normalized method for the calculation of income taxes. Interest expenses for "non-utility" operations and Canadian exploration and development expenses were excluded from the calculation of income taxes for rate-making purposes.

- The Board's initial rate hearing for Cochin Pipe Lines Ltd. was conducted in two phases during September and October. As a result of Phase I the Board accepted the company's proposed methodology of regulation and following Phase II the Board permitted a cost of service determination in conformity with the pipeline's commercial shipping agreements. The major features of the cost of service determination include deferral of depreciation expense to the third full year of operation, a rate of return determined by throughput and reflecting deemed interest expense and a semi-depreciated rate base, and deemed income taxes calculated on a flow-through basis.

- An application by Westcoast Transmission Company Limited for revisions to the manner in which it calculates its monthly cost of service toll was heard in August and September. Subsequently, the Board issued an amending order, effective 1 January 1981 allowing Westcoast a rate of return after income taxes on utility rate base of 11.51 percent return on a deemed common equity of 35 percent. The Board maintained the Company on normalized income taxes but changed the computation of deferred income taxes for toll purposes.

- A public hearing was held in November to consider an application by Trans Mountain Pipe Line Company and the Board subsequently issued a tariff order, effective 1 January 1981, which prescribes new tolls to be charged for the transmission of oil by the company. The Board allowed a before tax rate of return of 23.3 percent on rate base.

Inquiry Hearings

- On 19 November 1980, the Board commenced, in Vancouver, its "All Energy" Inquiry to examine the supply of oil, natural gas, and other forms of energy in relation to the domestic demand for all forms of energy, and the supply/demand balances of hydrocarbons and electricity. Following the publication of the National Energy Program by the Government of Canada on 28 October, all parties to the hearing were given the opportunity to assess the effects of this program on their forecasts of energy supply and demand and to submit their assessment by 30 December.

The hearing continued in Calgary, Halifax, and

Quebec City. Sittings in St. John's and Ottawa took place in January and February 1981.

Hearings/Applications Pending

- The Board received an application from Arctic Pilot Project Inc. for a licence under Part VI of the Act to export natural gas from Canada. The Company is owned by Petro-Canada Exploration Inc., NOVA, Dome Petroleum Limited and Melville Shipping Limited. The Applicant proposes to liquefy natural gas at Melville Island in the Canadian arctic and to transport the liquid by ice-breaking LNG carriers to a receiving terminal, to be located in Quebec or the Maritimes, for regasification and subsequent export to the United States. The requested licence is for the period 1 November 1983 to 31 December 2005 and would also include some exports of natural gas from conventional sources in Western Canada.

- In a related matter, the Board received an application from TransCanada PipeLines Limited for a certificate of public convenience and necessity under Part III of the Act for the construction of an LNG receiving terminal at Gros Cacouna, Quebec or Melford Point on the Strait of Canso, Nova Scotia. The liquefied natural gas received from the Arctic would be unloaded, stored and regasified, prior to transmission by pipeline to Canadian or U.S. markets.

- Pursuant to Section 22(2) of the National Energy Board Act, the Board will prepare a report to the Minister of Energy, Mines and Resources on behalf of the Minister of Indian Affairs and Northern Development respecting the proposed facilities of the Arctic Pilot Project on and adjacent to Melville Island inclusive of pipeline, liquefaction plant, liquid natural gas storage and ship loading facilities. The Board will be considering all aspects of the project in this inquiry.

It is expected that the Board will hold public hearings on the inquiry and the exports and southern facilities applications in 1981.

- On 19 December 1980, the Board received an application from Trans Québec & Maritimes Pipeline Inc. (a company incorporated by TransCanada PipeLines Limited and Q & M Pipe Lines Ltd.) for a certificate to construct a natural gas pipeline from

Lévis/Lauzon to Halifax. The Board expects to hear this application early in 1981.

- In December 1980, TransCanada PipeLines Limited filed an application with the Board to build a pipeline between North Bay and Morrisburg, Ontario.

- In June, Ontario Hydro applied to the Board for two licences to authorize the export of up to 25 000 GW·h per year of firm and interruptible power and energy to expire 30 June 1991, and for a licence to allow exports of up to 10 000 GW·h per year of unscheduled circulating power for simultaneous return to Canada to expire 31 December 1995. Ontario Hydro also applied for a certificate of public convenience and necessity to construct and operate a new double-circuit 345 kV interconnection at Niagara Falls with the Power Authority of the State of New York. At the end of the year the Board was waiting for Ontario Hydro to complete the certificate portion of its application with the expectation that a public hearing would be held early in 1981.

- In November, the New Brunswick Electric Power Commission applied to the Board for eight licences to export up to 8 670 GW·h per year of firm and interruptible power and energy. One licence would permit the export of 100 MW of firm power from the new Point Lepreau CANDU nuclear power station to the Massachussetts Municipal Wholesale Electric Company, under a unit participation agreement to commence 1 November 1981. A second licence would permit a similar export of 5 MW to Eastern Maine Electric Cooperative Inc. The other six licences would amend existing licences held by NBEPCC. All the new licences would expire 31 October 1990. At the end of 1980, the Board was analysing the application with the expectation that a public hearing will be held during 1981.

Litigation

The Board was involved in the following litigation during 1980.

- In December, 1976, the Board issued its decision on an application by TransCanada PipeLines Limited in respect of its tolls and tariffs under Part IV of the National Energy Board Act. As part of that decision, the Board disallowed the sale price of natural gas specified in a contract dated 1 November 1969, for

gas sold by TransCanada to Saskatchewan Power Corporation ("SPC") and Many Islands Pipe Lines Limited and substituted for that price the Saskatchewan CD Zone rate determined by the Board. The Board had previously decided, in April, 1976, that the 1 November 1969, contract was required to be filed by TransCanada under subsection 51(2) of the National Energy Board Act. Appeals by SPC on constitutional and other grounds from the Board's April 1976 decision to the Federal Court of Appeal and to the Supreme Court of Canada were dismissed in 1977 and 1978 respectively. In its appeal to the Federal Court of Appeal from the Board's December 1976 decision, SPC raised questions, *inter alia*, as to the Board's jurisdiction under Part IV of the National Energy Board Act, to vary the price stipulated in the contract for the sale by TransCanada of gas transported through its pipeline. On 29 May 1980, the Federal Court of Appeal dismissed SPC's appeal. Leave to appeal from the judgment of the Federal Court of Appeal was granted on 20 October 1980, by the Supreme Court of Canada. It is anticipated that the Supreme Court will hear the appeal in the spring of 1981.

- On 15 September 1977, Westcoast Transmission Company Limited applied to the Board under Part IV of the National Energy Board Act for an order respecting the tolls Westcoast proposed to charge for the transportation of natural gas produced in British Columbia and sold by Westcoast to its British Columbia and export customers. The Board ordered that the application be heard in three separate phases. In May, 1978, the Board issued its decision on Phase I of the application dealing with depreciation and income taxes. On the application of certain of the Intervenor in the proceedings, the Board undertook a review of its May 1978 Phase I decision pursuant to subsection 17(1) of the National Energy Board Act. The review decision on Phase I was issued in December 1978. Both Phase I decisions were the subject of appeals under section 18 of the National Energy Board Act and applications for judicial review under section 28 of the Federal Court Act. In October, 1979, the Board issued its final decision on the Westcoast application. Westcoast and certain Intervenor commenced appeals and applications for judicial review in respect of the Board's final decision. In addition, Westcoast made an application to the Board for a review under

subsection 17(1) of the National Energy Board Act of the Board's final decision, which application was dismissed by the Board in December, 1979.

Westcoast applied under section 28 of the Federal Court Act for judicial review of the Board's December 1979 decision refusing a review. All of the appeals and applications for judicial review in respect of the Westcoast application were heard by the Federal Court of Appeal in October, 1980, at which time Westcoast withdrew its application for judicial review of the Board's December 1979 decision. In January, 1981, the Federal Court of Appeal dismissed all of the appeals and applications for judicial review resulting from the Board's decisions on the Westcoast application.

- On 15 November 1977, the Board commenced a hearing in Fort St. John, British Columbia, on two applications by Westcoast for certificates under section 44 of the National Energy Board Act in relation to two pipelines proposed to be constructed in northeastern British Columbia. At the opening of the hearing, the Union of British Columbia Indian Chiefs requested an adjournment of the hearing, which request was denied by the President Member. On 18 November 1977, the Union applied to the Federal Court Trial Division under section 18 of the Federal Court Act for a writ of prohibition, with certiorari in aid, to restrain the Board from proceeding with those applications and to quash the proceedings conducted to that time. On 7 December 1977, the Trial Division of the Federal Court dismissed the Union's application. The Court held, on the fact of the case, that adequate notice of the hearing had been given to the Union and that the refusal of an adjournment was not tainted with unfairness or a denial of natural justice. On 12 December 1977, the Union appealed the judgment of the Trial Division to the Federal Court of Appeal. This appeal will be heard in the Federal Court of Appeal commencing on 12 May 1981.

As a result of the hearing in Fort St. John, the Board issued Certificates of Public Convenience and Necessity numbered GC-58 and GC-59 on 3 February 1978, to Westcoast in respect of two gathering pipelines in northeastern British Columbia. The Union of British Columbia Indian Chiefs applied to the Federal Court of Appeal for leave to appeal, under section 18 of the National Energy Board Act, from that decision. The grounds of that appeal are

that there was a denial of natural justice because the Board did not grant the adjournment requested by the Union, and that the Board does not have the jurisdiction to include conditions in the certificates requiring the filing of additional environmental information subsequent to the public hearing of a certificate application unless a similar opportunity is provided to the Union to submit similar information. The Union made a further application for leave to appeal in respect of the Board's subsequent decision that Westcoast had complied with the requirements for additional information specified in the certificate conditions. In this appeal, the Union has challenged the Board's decision on the basis that there was a denial of natural justice by the Board in not affording the Union an opportunity to make submissions on the information filed pursuant to the conditions. On 9 May 1978, the Federal Court of Appeal granted leave to appeal to the Union in respect of both appeals. These appeals will be heard at the same time as the Union's appeal from the judgment of the Trial Division of the Federal Court on the prohibition application.

Also, arising out of the same circumstances, an action was launched on 17 March 1978, in the Federal Court by Mr. Angus Davis and the Union of British Columbia Indian Chiefs against the National Energy Board, claiming general, special and punitive damages for breach of a statutory duty owed to Angus Davis and the Union of British Columbia Indian Chiefs. During 1980, various preliminary motions were heard by the Trial Division of the Federal Court. The action is pending in the Federal Court.

- In January, 1980, the Board amended two certificates held by Dome NGL Pipeline Ltd. and Cochin Pipe Lines Ltd. authorizing the construction and operation of two high vapour pressure pipelines between Sarnia and Windsor, in the Province of Ontario. Certain of the amendments to the certificates required the companies to upgrade their pipelines in accordance with the requirements of Part X of the Board's Oil Pipeline Regulations relating to high vapour pressure pipelines. The two companies applied for leave to appeal the Board's decision on the basis that the Oil Pipeline Regulations were being applied retroactively to the two pipelines. On 12 February 1980, the Federal Court of Appeal granted the companies' applications for leave to appeal. The appeals are pending in that Court.

Membership of the Board

There were several changes in the composition of the Board during 1980.

Mr. Jack G. Stabback, Chairman of the Board since January 1978, retired in May 1980 after a distinguished career in the public service. Mr. Stabback started at the Board in 1964 as Chief Engineer and became a Member of the Board in 1968. In 1974, he was appointed Associate Vice-Chairman, and in 1976 Vice-Chairman.

November 1980 brought five major changes in the Board.

Mr. C. Geoffrey Edge became Chairman of the Board, having been Acting Chairman since the retirement of Mr. Stabback. Mr. Edge was first appointed to the Board in January 1971, becoming Associate Vice-Chairman in November of 1975, and Vice-Chairman in February of 1978.

Mr. Ralph F. Brooks was appointed Vice-Chairman of the Board. Mr. Brooks joined the Board in 1968 as Assistant Chief Engineer. In 1972, he became Director General, Planning and in November 1973 he was appointed as a Member of the Board. In May of 1978, he became Acting Associate Vice-Chairman.

Mr. Jacques Farmer was appointed Acting Associate Vice-Chairman. Mr. Farmer became a Board Member in April 1974 after a lengthy career at Hydro-Québec and Gaz Métropolitain, inc.

Mr. John R. Jenkins was appointed as a Member of the Board, having served as a Temporary Member since May of 1978. Mr. Jenkins joined the staff of the National Energy Board in 1959, becoming Director of the Engineering Branch in 1972. From 1975 to 1978, Mr. Jenkins was Director General, Planning.

Mr. A. Boyd Gilmour was appointed as a Temporary Member of the Board. Mr. Gilmour joined the Board in 1967, became Director of the Economics Branch in 1973 and Director General, Operations in 1974.

Budget and Personnel

For the fiscal year 1980-81 the Board's budget is \$14,979,000 with a person-year allocation of 388.

During 1979-80 the budget was \$13,085,000 with 383 person-years.

Official Languages Act

The Board has continued its efforts to improve its capability to provide service in both official languages and to promote the use of both languages in its internal organization.

Parliamentary Committees

During 1980 the Board appeared before three Special Parliamentary Committees: The Special Committee of the Senate on the Northern Pipeline respecting Enhanced Oil Recovery in Canada, The Special Committee on Alternative Energy and Oil Substitution, and The Parliamentary Task Force on Regulatory Reform. In addition, the Board appeared before the Standing Committee on National Resources and Public Works and the Committee on the Northern Pipeline.

REVIEW OF THE YEAR

Supply and Demand

Domestic production of crude oil and equivalent hydrocarbons averaged $244.0 \times 10^3 \text{ m}^3$ per day in 1980, a decrease of $11 \times 10^3 \text{ m}^3$ per day or 4.6 per cent from the 1979 level. Production continued near the level of productive capacity.

The output of synthetic oil increased to an average of $19 \times 10^3 \text{ m}^3$ per day from the 1979 level of $14 \times 10^3 \text{ m}^3$ per day and would have been considerably greater but for a number of operating problems in the two plants concerned.

A total of $5\,541 \times 10^3 \text{ m}^3$ of crude oil and equivalent was licensed for export in 1980, a sharp decline from the total of $9\,101 \times 10^3 \text{ m}^3$ in 1979, and an illustration of the long-term decline in Western Canadian productive capacity. The light crude export curtailment which began in the last quarter of 1979 was continued. In addition $6\,016 \times 10^3 \text{ m}^3$ of refined petroleum products were licenced for export.

Canada's total net installed electrical generating capability at the end of 1980 is estimated at 78 000

megawatts (MW), up about five percent from 1979. Total Canadian consumption of electric energy in 1980 is estimated to have been 339 000 GW·h, up about five percent from 1979. Total exports of electric energy in 1980 were 30 180 GW·h, a decrease of 3.8 percent over the previous year.

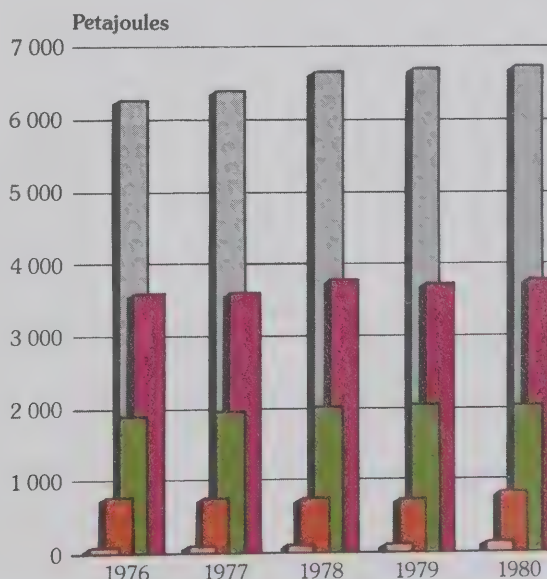
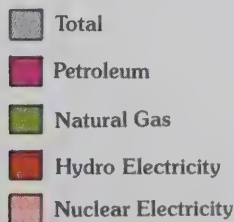
Natural gas production in Canada decreased by nine percent from $76\,160 \times 10^6 \text{ m}^3$ in 1979 to an estimated $69\,333 \times 10^6 \text{ m}^3$ in 1980. Of the total production, $42\,697 \times 10^6 \text{ m}^3$ were net sales to ultimate Canadian customers, a decrease of 1.8 percent from the previous year. This decrease was primarily attributable to a general slowdown of the Canadian economy. Exports to the United States amounted to $22\,563 \times 10^6 \text{ m}^3$ or 32.5 percent of total production. The substantial decrease in export volumes was primarily attributable to the slowdown in the U.S. economy and to surpluses of alternative energy sources and indigenous gas in U.S. markets at prices below the cost of Canadian gas.

Canadian Consumption of Selected Energies

Figure 1

	1976	1977	1978	1979(p)	1980(e)
Petroleum	3 600.3	3 608.0	3 763.4	3 719.7	3 774.5
Natural Gas	1 888.2	1 970.3	2 013.9	2 078.9	2 029.8
Hydro Electricity	738.6	736.3	778.6	774.3	809.6
Nuclear Electricity	59.1	89.5	106.0	119.8	130.6
Total	6 286.2	6 404.1	6 661.9	6 692.7	6 744.5

(p) preliminary (e) estimates



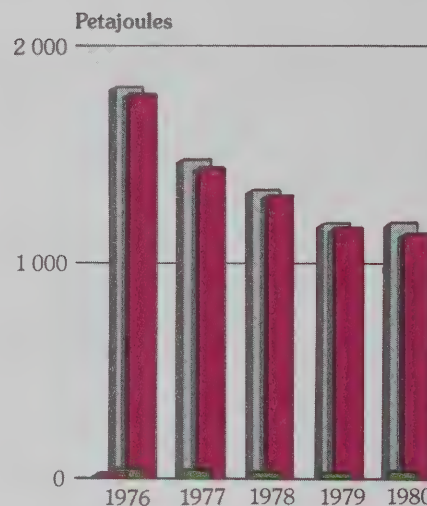
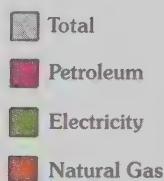
Imports of Petroleum, Natural Gas and Electricity

Figure 2(a)

	1976	1977	1978	1979(p)	1980(e)
Petroleum	1 778.1	1 443.0	1 317.4	1 158.2	1 142.3
Natural Gas	4.5	—*	.1	.1	.1
Electricity	37.9	28.4	22.1	19.0	33.4
Total	1 820.5	1 471.4	1 339.6	1 177.3	1 175.8

(p) preliminary (e) estimates

* less than 0.1 P.J.

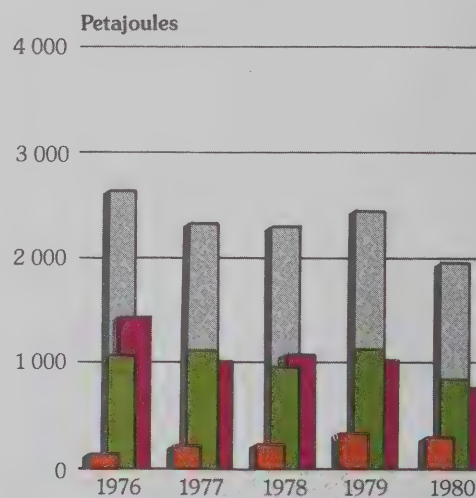
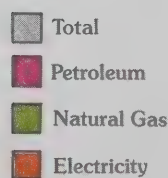


Exports of Petroleum, Natural Gas and Electricity

Figure 2(b)

	1976	1977	1978	1979(p)	1980(e)
Petroleum	1 423.3	1 000.7	1 090.7	1 008.5	799.5
Natural Gas	1 059.2	1 111.1	978.8	1 111.4	868.2
Electricity	135.0	210.5	227.8	331.0	300.6
Total	2 617.5	2 322.3	2 297.3	2 450.9	1 968.3

(p) preliminary (e) estimates



Oil and Gas Reserves

The Board's estimate of remaining established reserves of conventional crude oil as of 31 December 1979 was $807.5 \times 10^6 \text{ m}^3$, or $59.0 \times 10^6 \text{ m}^3$ lower than the 31 December 1978 estimate. Initial established reserves at 31 December 1979 were estimated at $2287.5 \times 10^6 \text{ m}^3$, an increase of $225 \times 10^6 \text{ m}^3$ from the 31 December 1978 estimate of $2265.0 \times 10^6 \text{ m}^3$. Production in 1979 was $80.7 \times 10^6 \text{ m}^3$.

Estimated Established Reserves of Conventional Crude Oil at 31 December 1979

	(10 ⁶ m ³)	
	Initial	Remaining
British Columbia	80.1	29.7
Alberta	1802.3	671.3
Saskatchewan	359.4	93.3
Manitoba	26.5	6.7
Northwest Territories	9.5	5.7
Ontario	9.7	.8
CANADA TOTAL	2287.5	807.5

Note: Propane, butanes and pentanes plus are not included.

The Board's estimate of remaining established reserves of marketable natural gas in the conventional producing areas as of 31 December 1979 is 75.8 EJ, 1.8 EJ higher than its 31 December 1978 estimate.

Additions to initial established marketable reserves during 1979 were 4.9 EJ of which 4.0 EJ were in Alberta and 0.9 EJ in British Columbia.

Estimated Established Reserves of Marketable Natural Gas at 31 December 1979

	(EJ)	
	Initial	Remaining
British Columbia	13.5	8.1
Alberta	98.4	65.7
Saskatchewan	2.4	1.4
Southern Yukon & Northwest Territories	0.5	0.3
Ontario and Other Eastern Canada Conventional Producing Areas	1.1	0.3
Total	115.9	75.8
Mackenzie Delta	5.6	5.6
Arctic Islands	9.7	9.7
CANADA TOTAL	131.2	91.1

Figure 3(a)

Estimated Established Reserves of Conventional Crude Oil from Conventional Producing Areas

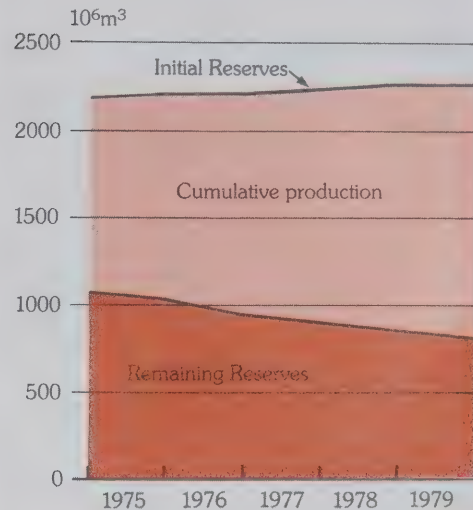
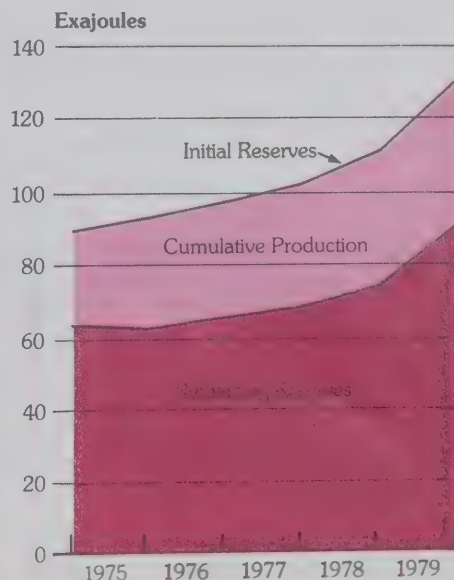


Figure 3(b)

Estimated Established Reserves of Marketable Natural Gas from Conventional Producing Areas



EXPLORATION & DEVELOPMENT ACTIVITY

– OIL & NATURAL GAS

The Canadian drilling industry experienced a record level of drilling activity during 1980. Alberta had the most notable increase in total wells drilled with some 7 250 wells completed in 1980 compared with 5 780 in 1979.

In 1980 exploratory drilling activity in the western provinces increased significantly from the previous year. Approximately 3 900 wells were drilled in 1980 compared with 2 800 wells in 1979 and 3 000 wells in 1978.

Preliminary estimates show that about 5 300 development wells were drilled in the western provinces in 1980, a substantial increase over the 4 700 wells drilled in 1979 and 3 800 wells in 1978.

A total of 26 wells were completed in the Territories mainland, the Beaufort Sea, the Arctic Islands, and in waters off the Atlantic coast, compared with 34 wells completed in 1979, and 22 wells in 1978.

The number of drilling rigs in Canada increased to an all-time high of 569 with a utilization rate of about 78 percent. Total well completions for 1980 are expected to be about 9 200, up some 20 percent over 1979.

There were 96 geophysical crews active in Canada at year-end, compared with 66 a year earlier.

The following is a summary of the significant activity which took place during the year. (LOCATIONS ARE IDENTIFIED ON THE ACCOMPANYING MAP).

Alberta

While the Deep Basin area of west-central Alberta continued to receive much publicity during the year, drilling activity continued at record levels throughout the Province.

Several gas and oil discoveries were made in the Nanton-Claresholm(1) area. Major gas discoveries and/or field extensions were made in the foothills belt in the Robb-Hanlan(2) and Brown Creek(2) area.

Drilling for shallow gas in the Suffield(3) and Medicine Hat(3) areas continued at a high level during 1980. Activity in the Elmworth(4) area

remained high and several large-capacity gas wells were drilled. Halfway formation oil discoveries and/or field extensions north of the Elmworth area (in the Wemby, Beaverlodge, and Eythe areas) and Cardium and Dunvegan oil discoveries and/or field extensions southeast of the Elmworth area (in the Lator, Cutbank River, Kakwa, and Simonette areas) indicate a substantial oil potential for the Deep Basin.

The West Pembina(5) area and the Zama-Rainbow(6) area continued to yield Devonian pinnacle reef discoveries of oil and gas. Substantial natural gas and heavy oil reserves of Lower Cretaceous age were verified in the Primrose Lake Air Weapons Range(7).

British Columbia

Drilling activity in British Columbia was moderately down from 1979. Preliminary statistics show 350 wells drilled in 1980 compared to 390 wells in 1979.

The Tommy Lakes(8) area was quite active and several Halfway gas discoveries and/or extensions were made in 1980. A major extension of the Deep Basin play in British Columbia was indicated by a gas discovery in the Steeprock(9) area. A Devonian gas discovery was made in the Sierra(10) area.

Saskatchewan

1980 was a record drilling year for Saskatchewan. Preliminary data show 1 500 wells drilled in Saskatchewan compared to 1 300 wells in 1979. This increase in drilling activity was primarily the result of operations in the heavy oil belt in the west-central section of the Province(11). Shallow gas drilling continued in the Hatton(12) area.

Yukon and Northwest Territories Mainland

Nine wells were completed in the Yukon and Northwest Territories during 1980, compared to 15 wells in 1979. As part of a program to market oil production from the Norman Wells (13) field to southern Canada, four wells (3 oil wells and 1 water injection well) were drilled to further evaluate the Norman Wells reservoir.

In the extreme southern Territories the Westcoast et al Silt Lake G-62, Texaco Shell Bovie Lake M-78,

Oil and Gas Developments



and Paramount et al Liard D-29 wells were dry and abandoned. A third development well was completed in the Kotaneelee field. Paramount HB et al Cameron Hills J-62(15) was completed as a Slave Point gas well.

Mackenzie Delta - Beaufort Sea

In part due to the worst ice conditions since Dome Petroleum started its Beaufort program five years ago, only two offshore wells were completed in 1980. Dome Gulf Tarsiut A-25(16) an oil discovery and Esso et al Issungnak O-61(17), an oil and gas discovery, were both reported to have large oil potential. On land, the Esso Mayogiak M-16 development well was dry and abandoned.

Dome Gulf Hunt Kopanoar 2I-44(18) the follow-up to the 1979 Kopanoar oil discovery was suspended at the end of the drilling season; drilling will resume in 1981. Operations at four other wells: Dome Superior Orvilruk O-03, Dome Hunt Kenalooak 2J-94, Dome Hunt Gulf Koakoak O-22, and Dome et al Kilannak M-76 are also to be resumed in 1981. At year-end the Esso Gulf et al Issungnak 20-61 delineation well was drilling at 2 401 m from an artificial island.

Arctic Islands

In the Arctic Islands five wells were completed in 1980, compared with nine wells in 1979. A delineation well, Panarctic AIEG Whitefish G-63(19), confirmed that Whitefish is a major offshore gas field. Panarctic et al Char G-07(20), also an offshore well, discovered significant gas reserves and had non-commercial oil shows. Three wells were abandoned; Panarctic et al Balaena D-58, Panarctic et al Vesey A-27, and Dome et al Wallis A-73.

A project which has major implications for northern frontier development is now under review: the Arctic Pilot Project proposes to bring the Drake Point gas field in the Arctic Islands into production.

East Coast Offshore

In waters off the East Coast during 1980, nine wells were completed, four wells were suspended, and four wells were still active at year-end. Hibernia(21) was undoubtedly the most important oil development in Canada in 1980. The field now has three oil wells

and a fourth, Mobil et al Hibernia G-55A, was drilling at 2 058 m at year-end. The operator, Mobil Oil, has estimated reserves of $160 \times 10^6 \text{ m}^3$ (one billion bbls.) of recoverable oil.

In the Hibernia area, Mobil et al Ben Nevis I45, 40 km southeast of the Hibernia field, had non-commercial oil and gas shows and was abandoned. Mobil et al South Tempest G-88, 80 km northeast of Hibernia was drilling at 4 069 m at year-end.

The Aquitaine et al Hekjn O-71(22) in the Davis Strait was a gas discovery. On the Labrador Shelf (23) three wells were dry and abandoned; Petro-Canada et al Gilbert F-53, Petro-Canada et al Ogmund F-72, and Petro-Canada et al Roberval C-02. Two wells in the Gulf of St. Lawrence(24): HBOG et al East Point E-47 and HBOG et al Beaton Point F-70, had no hydrocarbon shows and were abandoned.

The only active well on the Scotia Shelf in 1980 was Mobil Texaco PEX Venture B-13(25) well, a step-out to the Venture D-23 1979 gas discovery. At year-end, Venture B-13, was drilling at 5 197 m.

Operations at four wells on the Labrador Shelf: Chevron et al South Labrador M-79, Petro-Canada et al North Lief I-05, Petro-Canada et al North Bjarni F-06, and Bjarni O-82 were suspended with the end of the drilling season and are to be resumed in 1981.

OPERATIONS REVIEW

OIL AND PETROLEUM PRODUCTS

The combination of favourable and negative factors in the international oil market in 1980 affected the Canadian oil economy as a whole only marginally, although the impact on some individual companies was pronounced. World oil supply was reduced by some $600 \times 10^3 \text{ m}^3$ per day by the Iran-Iraq hostilities commencing in September; the planned imports into Canada were cut back by only $3.2 \times 10^3 \text{ m}^3$ per day and this was offset by the initial imports of Mexican crude oil under an 18-month state-to-state agreement, averaging $3.4 \times 10^3 \text{ m}^3$ per day in the last two months of the year. In general, the international oil market exhibited conditions of plentiful supply throughout most of 1980, a condition attributable more to a levelling off of demand in most important consuming regions rather than increased production of crude oil.

Canadian demand for refined petroleum products increased by less than one percent from the 1979 level. The increase was confined to the categories of motor gasoline and diesel oil; consumption of light and heavy fuel oils declined. Refinery crude runs fell

3.4 percent to an average of $303 \times 10^3 \text{ m}^3$ per day. A significant factor was the closure in July of the $13.2 \times 10^3 \text{ m}^3$ daily capacity refinery at Point Tupper, N.S., an event not unrelated to the weak demand for heavy fuel oil. In Quebec and the Atlantic Provinces refinery runs averaged $122 \times 10^3 \text{ m}^3$ per day compared with $132 \times 10^3 \text{ m}^3$ per day in 1979. West of Quebec refinery runs were $181 \times 10^3 \text{ m}^3$ per day in 1980, the same as the 1979 average.

There were two major adjustments to crude oil prices in 1980. The domestic price was increased by \$6.30 per m^3 effective 1 January 1980 and by \$12.60 per m^3 effective 1 August 1980, bringing the average well-head price of Alberta crude to \$105.45 per m^3 for the last five months of the year.

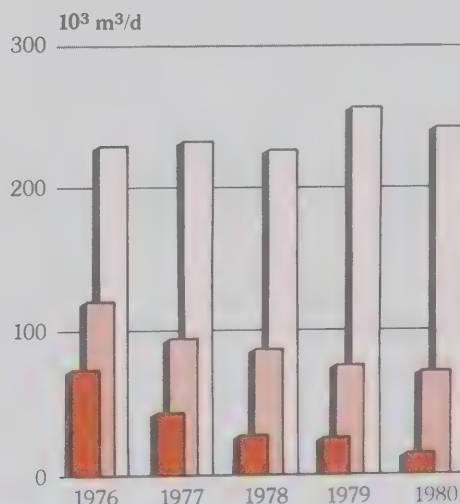
The Board continued its monitoring system which provides government and the oil industry with a monthly overview of petroleum supply and demand in Canada. The meetings earlier initiated by the Board with provincial energy authorities to provide a forum for discussion of petroleum supply matters were transferred to the auspices of the Energy Supplies Allocation Board (ESAB) on the reactivation

Crude Oil and Equivalent Hydrocarbons Production, Imports & Exports

Figure 5

	1976	1977	1978	1979(p)	1980(e)
Canadian Production	229.609	230.479	227.642	256.396	242.407
Exports	73.917	43.216	27.665	24.972	14.839
Imports	119.874	95.786	86.616	76.281	71.739

(p) preliminary (e) estimates



of that agency early in 1980. Board officials continued to brief their provincial counterparts at the subsequent meetings which, it is believed, have aided considerably in elevating the degree and level of Federal-Provincial communication in the area.

Crude Oil Supply, Requirements, Exports and Exchanges

The production of crude oil and equivalent hydrocarbons in 1980 averaged 244.0×10^3 m³ per day, down by 11×10^3 m³ per day or 4.6 percent from 1979. The decline reflected the long-term trend of established reserves in Western Canada; there was virtually no shut-in capacity during the year, the spare producibility having all been reactivated in 1979 to replace the losses in offshore supply occurring in that year.

Requirements in Canada for crude oil and equivalent were 315×10^3 m³ per day in 1980, of which 217×10^3 m³ per day was supplied from Canadian sources, 80×10^3 m³ per day from direct imports and 18×10^3 m³ per day from sources available to United States companies in the form of exchange oil.

During most of the year Canadian demand for domestic light crude oil and equivalent was such that formal allocation was required to prevent price distortions and to provide equitable distribution of the available supply. The Board, after making allowance for British Columbia and Prairies requirements and exports of heavy crude oil, allocated the remaining domestic crude oil and equivalent to Ontario and Quebec refineries. Allocation was controlled by the issuance of licences to export domestic oil through Gretna, Manitoba for return at Sarnia via the Lakehead and Interprovincial Pipe Lines. Allocation was based on historic runs of crude oil in the refineries affected, with allowance made for processing arrangements by some Canadian wholesalers. To control more effectively the distribution of domestic crude to Montreal refineries, the Board, from 1 January 1980, assumed responsibility for allocation of space on the Sarnia/Montreal section of the Interprovincial Pipe Line, a function which had up to that date been carried out by the Petroleum Compensation Board.

As part of these allocation procedures the Board introduced procedures designed to recognize the

special needs of the independent sector of the petroleum industry in Eastern Canada. The approach, which the Board believes must remain flexible in order to meet changing circumstances, involves the issuance of allocations of domestic crude oil to new shippers. For allocations in Montreal, the independent operator must satisfy the Board that the company has a need for the oil. In Ontario, the Board has been following a procedure of licensing up to 795 m³ per day to each new shipper who has applied for an allocation. The amount of crude oil licensed by the Board by means of these special procedures was in the range of 1.9 to 2.7×10^3 m³ per day.

Exports of Canadian domestic light crude oil to the United States were restricted to negligible quantities required for operational reasons. Heavy crude oil surplus to current Canadian requirements continued to be exported and in 1980 averaged 14.8×10^3 m³ per day. Production of Canadian heavy crude oil was curtailed from August through November as a result of decreased Canadian and United States demand. To minimize these effects and to permit more effective marketing the Board re-instituted quarterly licensing of heavy crude oil movements and adjusted some export prices. Heavy crude oil production was again at maximum levels in December.

Given the stringent supply circumstances there was little oil available for the "Eastern Canadian" type of exchange but the "mid-continent" type of exchange, largely a matter of transportation convenience, continued at normal levels.

Licensed refined product exports were at a somewhat reduced level at 16.5×10^3 m³ per day about 17 percent lower than the 1979 average. To ensure that marine and aviation fuels used in international transportation will not be sold at the subsidized price paid by domestic consumers in Canada, on 28 October 1980, the Government announced that, effective 1 April 1981, export controls and export charges would be extended to aviation and marine bunkers used by foreign flag carriers and by domestic carriers travelling in international commerce. As with other petroleum exports, the National Energy Board will be responsible for issuing the requisite export licences and will be responsible for administering the collection of export charges.

NATURAL GAS AND GAS PRODUCTS

The high level of natural gas production by the Canadian natural gas industry in 1979 was tempered in 1980 by the lack of an oil pricing agreement between the producing provinces and the federal Government, by reduced domestic requirements, and by decreased exports to the United States. Production in British Columbia was reduced by 21.3 percent and in Alberta by 5.3 percent.

Natural Gas Production and Consumption

In 1980 production of natural gas decreased by $6\,827 \times 10^6 \text{ m}^3$ * from the 1979 levels, a decrease of 9.0 percent. Net sales of natural gas in Canada during 1980 decreased by $798 \times 10^6 \text{ m}^3$ *, a decrease of 1.8 percent. The greatest percentage change occurred in the residential sector, with a decline of 4.2 percent, reflecting the effects of higher prices, conservation, and mild weather. In the industrial sector, which accounted for 55.8 percent of total net sales in Canada, natural gas consumption decreased by 3.2 percent from the previous year. The commercial sector registered a 4.3 percent increase.

Domestic Natural Gas Pricing

The Petroleum Administration Act (PAA) was enacted in 1975, assigning responsibility for the administration of domestic natural gas pricing to the Board. Part III of the PAA provides the Government with authority to achieve a uniform price, exclusive of transportation and service costs, for natural gas sold within Canada but outside of the province of its production. The PAA provides the Government with a mechanism which enables it to maintain a balanced relationship between the prices of natural gas and petroleum products sold in Canada. Also, the Act helps to achieve a balance between the interests of consumers and producers in Canada, while encouraging the development and production of natural gas.

Under the Act, the Minister of Energy, Mines and Resources may enter into an agreement with the government of a producing province to establish prices for natural gas produced in that province. Such an agreement between the federal Government and the Government of Alberta was concluded in October 1975, and remained in effect subject to mutually agreed amendments to the price of natural

gas until 31 October 1980. The latest price change under the agreement occurred at 1 September 1980, when the Toronto reference price was raised by 30¢ per MMBtu to \$2.60 per MMBtu.

On 12 November 1980, the federal Government, in the absence of an agreement with the Province of Alberta, as provided for under section 50 of the PAA, tabled before Parliament the relevant sections of the PAA (Section II, Subsection 52(1)) permitting it to unilaterally prescribe prices for oil and natural gas entering interprovincial and international trade.

The National Energy Program provides for the establishment of city-gate prices for natural gas shipped interprovincially for all centres east of Alberta and for an increase in the price of 45¢ per Mcf per year for three years starting 1 November 1980.

During 1980, under the authority of Part III of the PAA, Domestic Gas Price Restraint, the Board prepared for the approval of the Governor in Council, nine amendments to the Natural Gas Prices Regulations, 1980 and 15 special and general orders. The prices established as a result of these new regulations and orders reflected changes in the price of Alberta-produced natural gas in Canada, outside Alberta.

As in past years, the Board coordinated approvals of changes to natural gas pricing east of Alberta with the Alberta Petroleum Marketing Commission, which carries out similar functions with respect to the administration of natural gas pricing within Alberta.

Natural Gas Export Price

Under Section 14 (formerly Section 11A) of the National Energy Board Part VI Regulations, adopted in 1970, the Board is required to maintain surveillance of prices for Canadian natural gas in United States markets. If, in the opinion of the Board, there has been a significant increase in prices for competing energy supplies in the export market, the Board reports its findings and makes its recommendations to the Governor in Council.

In 1979 there was great instability in world crude oil prices. At the December 1979 OPEC meeting in Caracas, Venezuela, member countries announced, absent formal agreement, that crude oil prices would

* Estimate

range from a low of \$24.00 to a high of \$34.50 per barrel. Saudi Arabian oil prices increased from \$18.00 to \$24.00, or by one third, and other countries to a greater extent.

Such increases substantially raised the average price of crude oil imported into Canada. As a result of these events, the Board concluded that the substitution value of natural gas, as of 1 January 1980, based on foreign crude oil imports, had risen by \$0.95 (U.S.) per GJ to \$4.17 (U.S.) per GJ (\$4.47 (U.S.) per MMBtu). In its January 1980 report to the Governor in Council, the Board recommended that the export price of Canadian natural gas be set accordingly. Effective 17 February 1980, the export price of Canadian natural gas was increased as recommended. As in the past, Licence GL-29 was not increased to the same extent because of competition from coal; its price was set at \$3.40 (U.S.) per GJ (\$3.65 (U.S.) per MMBtu).

As a result of United States Government reaction to these increases, United States Energy Secretary Duncan and Canada's Minister of Energy, Mines and Resources met on 24 March 1980 and agreed to a statement of principles on Canadian natural gas

export pricing. This agreement, based on substitution value of gas for crude oil imported into Canada, clarified the principles upon which the export price would change in the future.

Subsequent to the price increase, exports of Canadian natural gas began to decline below the volumes exported in a similar period last year. The Board, recognizing that the factors affecting marketability of Canadian natural gas in United States markets were not solely price related but were also affected by a United States economic downturn, a surplus of residual fuel supplies and the availability of indigenous natural gas at prices substantially below the \$4.47 level, recommended that no further price increase be initiated. Accordingly, the export price of Canadian natural gas remained at the \$4.17 (U.S.) per GJ (\$4.47 (U.S.) per MMBtu) from 17 February 1980 through year-end.

Natural Gas Exports

Net exports of natural gas to the United States in 1980 totalled $22\,563 \times 10^6 \text{ m}^3$ *, a decrease of 20.4 percent from the previous year. The revenue, on the

* Estimate

Natural Gas Production

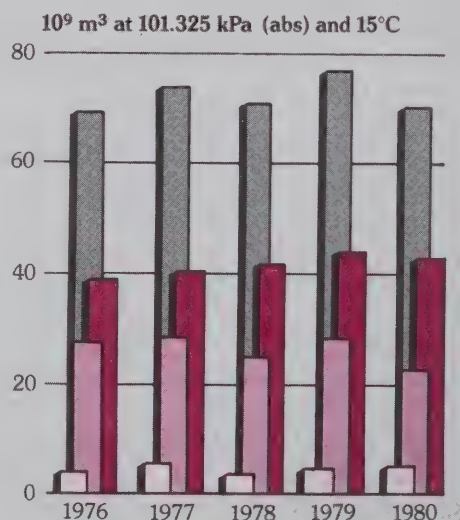
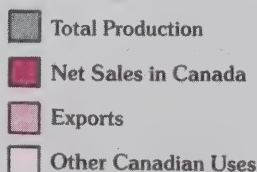
Figure 6

	1976	1977	1978	1979(p)	1980(e)
Net Sales in Canada	38.835	40.547	41.745	43.495	42.697
Other Cdn Uses*	3.828	4.592	3.578	4.331	4.595
Exports	27.013	28.336	24.961	28.344	22.141
Total Production**	69.676	73.475	70.284	76.170	69.333

(p) preliminary (e) estimates

* Includes Pipeline Fuel and Losses but excludes Field Plant Uses and Losses

** Marketable Pipeline Gas



other hand, increased by some 32 percent as a result of the higher export prices.

Later in the year as a result of the decline in the volume of natural gas exports to the United States, and concerned about the enforceability of take-or-pay provisions in existing export sales contracts, the Board commenced an investigation of the means by which the method used to determine the export price of natural gas might be modified to provide an incentive to the United States importers to buy more natural gas and thereby better protect Canadian interests. The Board has advised the Minister of its recommendations.

At year-end 1980 the following exports, licenced by the Board and approved by the Governor in Council in late 1979, had not received import approval from the United States regulatory authorities:

	Term Volume (10 ⁶ m ³)
Columbia Gas Development of Canada Ltd. (GL-54)	2 394.0
Niagara Gas Transmission Limited (GL-55)	717.5
ProGas Limited (GL-56)	<u>17 050.0</u>
TOTAL	20 161.5

New licences and orders to export natural gas and amending orders issued in 1980 are tabulated in Appendices G-III and G-IV. Exports of natural gas under each licence and order in 1980 are tabulated in Appendix G-V.

Ethylene

Two short-term ethylene orders were issued in 1980. Dow Chemical of Canada Ltd. was issued orders for the exportation of 9 000 000 kilograms via truck from Sarnia, Ontario for the period 7 February 1980 to 31 December 1980 and again for the period 1 January 1981 to 31 December 1981.

Ethane

One short-term ethane order was issued in 1980. Dome Petroleum Limited was issued an order for the exportation of 116 070 m³ via pipeline from Sarnia, Ontario for the period 30 May 1980 to 29 May 1981.

Export Control of Propane and Butanes

In the summer of 1980, the Board completed a comprehensive report to the Minister which assessed the potential for expanding the market for propane and butanes in Canada. The Board determined that through various incentives, expanded LPG usage (mainly propane) could displace up to 6.6×10^3 m³ of imported crude oil per day by 1990. The principal "new" market that could be developed is the fleet carburetion market, primarily in Eastern Canada.

The Board continued in 1980 to allocate the production of propane and butanes between domestic and export markets and to set minimum export prices f.o.b. Alberta applicable to all propane and butanes exports. The Board estimated that during the current allocation year (1 April 1980 to 31 March 1981), the total net Canadian production of propane would be $7\,300 \times 10^3$ m³, and of butanes, $4\,480 \times 10^3$ m³.

Canadian requirements for propane were estimated to be $3\,555 \times 10^3$ m³, some 5.1 percent above the requirements of the previous allocation year, while Canadian requirements for butanes were estimated to be $1\,784 \times 10^3$ m³, some 9.7 percent below the corresponding volumes for 1979. In its calculation of domestic demand for propane, the Board included a contingency volume to accommodate domestic market expansion. This resulted in a reduction of the export share of Canadian production from 52 percent in the previous allocation year to 45 percent currently. The export share for butanes remains unchanged at 60 percent.

For the year 1980, the estimated total volume of propane exported from Canada was $4\,344 \times 10^3$ m³ or 62.0 percent of estimated total net Canadian production. This compares with 1979 exports of $4\,614 \times 10^3$ m³, 64.0 percent of net Canadian production. For butanes, the estimated total volume exported in 1980 was $2\,559 \times 10^3$ m³ or 58.9 percent of estimated net Canadian production, compared with 1979 exports of $2\,726 \times 10^3$ m³, 59.0 percent of net Canadian production. The predominant market for Canadian exports continues to be the United States. However, in 1980 approximately 12.0 percent of propane exports were to other countries, primarily to Japan. The underground inventory of propane during 1980

ranged from a low of $509 \times 10^3 \text{ m}^3$ to a maximum of $1\,460 \times 10^3 \text{ m}^3$. For butanes, the 1980 inventory increased from $217 \times 10^3 \text{ m}^3$ to $686 \times 10^3 \text{ m}^3$. The Board's minimum export prices for LPG, normally established monthly, varied from 6.0 cents in January to 10.5 cents in December per litre f.o.b. Alberta for propane, and 6.5 cents in January to 12.0 cents in March, June, and December per litre f.o.b. Alberta for butanes.

PIPELINE ACTIVITIES

Oil Product and High Vapour Pressure Pipelines

In December of 1979, Interprovincial Pipe Line Ltd. filed an application with the Board to replace 45.7 km of its 864 mm line #3 between km 15.2 and km 36.9 and between km 116.0 and km 139.9 near Edmonton, Alberta. This would complete the replacement program which IPL began in 1979 which was necessitated by a history of failures attributable to stress corrosion cracking along the longitudinal pipe weld. A public hearing was held in February, 1980 and a certificate was issued in April. Subsequent to the completion of construction and testing of the new line, leave to open orders were granted in August and October, 1980.

Interprovincial also filed an application in October, 1980 to relocate its 508 mm line across the Welland Canal near Thorold, Ontario which was necessitated by the widening of the Welland Canal. Board approval for the relocation was granted in December, 1980 and completion of construction is expected during the spring of 1981.

During the summer of 1980, Trans-Northern Pipe Lines Ltd. applied to the Board for approval to replace 6.8 km of its 219.1 mm Ottawa lateral pipeline with a 323.9 mm line located south of Ottawa, and to abandon its original line. The Company also applied for the installation of additional pump units at its Castleton, Bowmanville and Clarkson pump stations. Both of these applications were approved in October, 1980.

Early in 1980, Cochin Pipe Lines Ltd. applied to the Board for approval to construct a meter station at Regina and for the installation of metering facilities at

the Alameda pump station. Construction of the Regina meter station commenced in May and leave to open was granted in November, 1980. Construction of the Alameda metering facilities was approved in October, 1980.

In January and February, 1980, Manito Pipelines Ltd. applied to the Board for approval of additional facilities at its existing Blackfoot pump station in Alberta and for authority to construct a cone roof storage tank with additional facilities at its existing Unity pump station. The Board approved the application and construction was completed in November.

During 1980 Interprovincial Pipe Line Company continued its program of investigating dents on its Sarnia to Montreal line. Approximately 194 dent locations were investigated in 1980. A total of 76 dents did not conform to the Oil Pipeline Regulations and were repaired. IPL informed the Board that, as of November, 1980 all dents in priority areas had been investigated and repaired where necessary. IPL also indicated that another internal electronic survey of the line had been undertaken in early November, the results of which are expected early in 1981.

Pipeline Incidents

The safe operation of pipelines, including the protection of the general public, and the employees and facilities belonging to companies under the Board's jurisdiction continued to receive priority by the Board during 1980. A total of 45 incidents occurred during the year. A statistical breakdown of the incidents is provided at the end of this section.

No major pipeline breaks or oil spills of more than 15 m^3 occurred during 1980 related to facilities under the Board's jurisdiction apart from the two incidents described below.

In August 1980 failure of the mainline pump at Manito Pipe Line's Neilburg Pump Station caused the sump to overflow spilling between 24 and 32 m^3 of oil, most of which was contained within the station. However, some oil migrated into an adjacent field.

In September 1980 Wascana's pipeline near Ceylon, Saskatchewan was ruptured by an unauthorized crossing and 24 m^3 of oil were spilled.

Some of the more significant leaks included a leak caused by a 100 mm crack in a longitudinal seam found during a leak detection survey, an underground leak due to a defective girth weld, and another due to a post-hole auger gouging the pipe.

On 26 February 1980, a large fire occurred at the Princess Compressor Station of NOVA, an Alberta Corporation, in south-eastern Alberta. This station is not under Board jurisdiction. However delivery to the TransCanada PipeLines Limited system at Empress was reduced to between $17 \times 10^6 \text{ m}^3$ and $20 \times 10^6 \text{ m}^3/\text{d}$ from a normal gas flow rate of approximately $95 \times 10^6 \text{ m}^3$ as a result of this incident. An immediate response to the incident by NOVA resulted in additional quantities of gas being delivered to the Empress Station by 29 February. On 3 March, deliveries had been restored to the $88 \times 10^6 \text{ m}^3/\text{d}$ level.

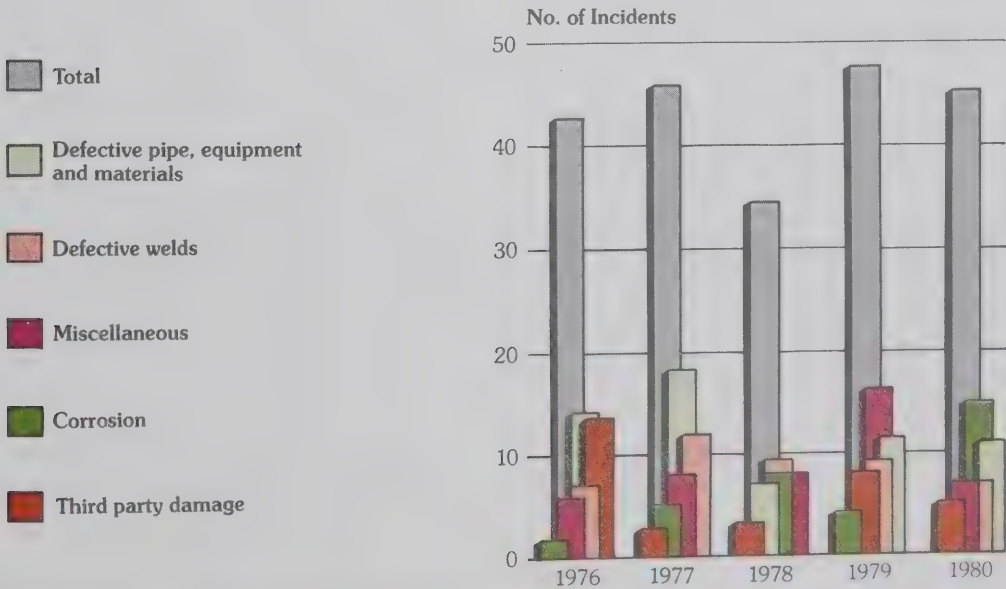
By cutting their takes to the minimum contract levels and satisfying local demand from their stored gas, several companies including Saskatchewan Power, Consumers' Gas, and Northern and Central Gas in Canada, and Montana Gas and Michigan Wisconsin Gas in the United States, cooperated with

TransCanada during the crisis. The American companies, Northern Natural and Tennessee Gas Pipeline, as well as Union Gas in Ontario were all able to initiate emergency deliveries to the TransCanada system. The disruption of the international flow of gas required Board authorization for short-term net imports from American companies. Increased LNG and LPG usage by Gaz Métropolitain, inc. and Greater Winnipeg Gas respectively, contributed towards a further reduction in TransCanada's immediate obligations. In addition to supplying its own local demands from storage, Saskatchewan Power was also able to initiate deliveries to TransCanada. As a result of all of the above steps, sales losses across the TransCanada system was estimated to be only $5 \times 10^6 \text{ m}^3/\text{d}$. The Board greatly appreciated the immediate assistance from the United States natural gas industry and United States regulatory authorities in alleviating the impact of the outage on the NOVA system.

The accident was attributed to a fracture at the M and J valve at the Princess Compressor Station. This mishap led TransCanada to investigate the similar M and J valves throughout its system. They established that the poor weld quality and operational experience of these valves justified their replacement. Upon

Figure 7

Causes of Pipeline Incidents



application to the Board the replacement of 41 M and J valves was approved and is presently being carried out by TransCanada.

On 21 August 1980, an explosion occurred at the Laprise Booster Station, in Westcoast's Fort St. John gathering system, in northern British Columbia. An emergency shutdown of the station was immediately initiated resulting in only a minor loss of gas. One operator received superficial burns as a result of the incident. As a result of the supply surplus at the time of the accident, no interruption of service to market areas was necessary. Investigation revealed that the explosion was caused by a gas leak in a compressor valve cap. Westcoast undertook to replace all the compressor valve caps at the station.

No fatalities or serious injuries occurred during 1980.

Pipeline Crossings by Third Parties

The Board has jurisdiction over approximately 29 020 kilometres of pipeline located in all provinces from British Columbia to Quebec. In the interest of public safety and to ensure the safe operation of the pipeline, any third-party construction activity affecting these pipelines requires prior authorization from the Board. During 1980 a total of 740 orders were issued authorizing crossings of pipelines by third parties. These crossings included the construction of highways, the installation of sewers, watermains, culverts, telephone and power lines and the crossing of pipelines by other pipelines. The Board also granted approvals for parking lots, railway installations, earth berms, and a utility tunnel, where pipelines under its jurisdiction were affected.

Concern over the installation of unauthorized crossings prompted the Board to develop an inquiry procedure to investigate such crossings and to ensure that they do not constitute a safety hazard.

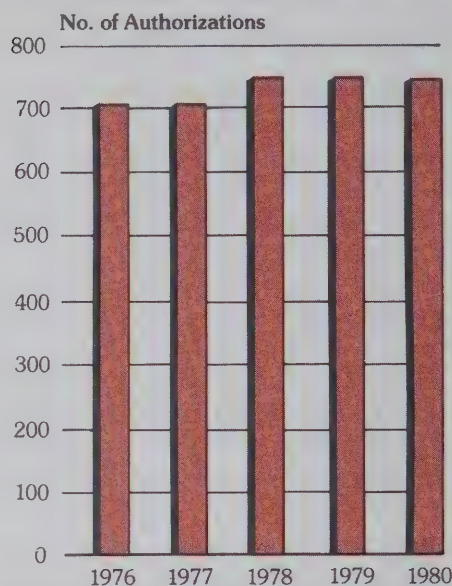
The Board notes an increased interest being taken by municipalities and provincial governments relating to regulations and guidelines affecting off right-of-way

development adjacent to pipelines, and has met with representatives at the different levels of government to discuss concerns relating to such encroachments.

All applications filed with the Board for third-party

Figure 8

Authorization Granted to Third Parties to Construct Crossings of Pipelines



crossings are kept on record and are available to companies and the general public.

Natural Gas Pipelines

Two projects by Westcoast Transmission Company, approved in 1979, were constructed in 1980. The Junior Sierra gathering system in northern British Columbia was completed in the spring of 1980. A major expansion of the sulphur recovery plant at Taylor, British Columbia was almost complete by year end.

Population encroachment in the Fort St. John area of British Columbia resulted in the necessity to upgrade two of Westcoast's pipelines. This construction was completed in November 1980. Other Westcoast pipeline projects completed by year end included an upgrading of pipe in the mainline loop south of Quesnel, the installation of nine highway crossings in the mainline in the Coquihalla Canyon, British Columbia, and the relocation of a section of the mainline near Pine Pass in British Columbia.

In order to accommodate increased winter domestic and export demands, Westcoast applied to construct five sections of mainline looping between Pine Pass

and Hihium Lake, British Columbia. This project was approved by the Board and by year end was 95 percent completed.

Meter stations were constructed at Doe Creek, 150 Mile House, and Dunkley Mills, British Columbia to facilitate the expansion of local gas distribution networks. Due to a deterioration in the operating performance and to the poor fuel efficiency of some of Westcoast's gas turbine units, the Company applied to replace six units. Two replacement turbine units were approved and installed and the remaining units await a decision by the Board. Several major maintenance projects were undertaken by the Company at its Fort Nelson sulphur plant during 1980.

Early in 1980, TransCanada PipeLines Limited constructed a loop of a line serving Sault Ste. Marie, Ontario which enhanced local security of supply, met Algoma Steel Plant's peak hourly demand requirements and included a delivery point to serve the local airport. During the summer TransCanada looped the mainline between Maple and Brampton, Ontario. This project was justified on the basis of security of supply and capacity considerations.

TransCanada also constructed a pipeline from the mainline near North Bay to the town of Thorne, Ontario. Champion Pipeline Corporation extended this lateral 2 km across the Ottawa River to Temiscaming, Quebec. This lateral from the mainline to Thorne and its extension to Temiscaming provide domestic customers in these towns and Tembec Forest Products Incorporated with natural gas.

In connection with the Maple to Brampton looping program TransCanada applied to add a compressor unit on the Niagara Extension. In conjunction with the looping program, the installation of this new compressor unit will enable TransCanada to meet its 1981-82 winter peak day requirements downstream of Lisgar. The Board issued an order for this construction in December 1980. It is anticipated that the unit will be in place and operating late in 1981.

Alberta Natural Gas is expected to complete the replacement of four reciprocating compressors at Crowsnest, B.C., in mid 1981. The Board issued an order for this construction in March of 1980.

The Alberta Natural Gas Company construction of the Galloway meter station in British Columbia, the

Niagara Gas Company replacement and relocation of its pipeline at the Chaudière crossing of the Ottawa River, and the Union Gas Company construction of its Ojibway meter station were other projects completed in 1980.

Alaska Highway Gas Pipeline

This project, consisting of 7 720 km of large diameter pipe, will transport Prudhoe Bay gas reserves to the U.S. West and Midwest.

The construction of the pipeline in Canada is regulated by the Northern Pipeline Agency. In addition to assisting the Agency, the Board is responsible for financial, tariff and certain engineering matters.

Foothills Pipe Lines (Yukon) Ltd. is responsible for building the Canadian section, some 3 253 km in the Yukon, northern B.C., Alberta and southeastern B.C. Construction was started on the "prebuild" sections in August of 1980. The Western leg of the "prebuild" from Caroline, Alberta to Kingsgate on the British Columbia/U.S. border consists of 213 km of 914 mm diameter pipe in seven loops of the existing AGTL system in Alberta and the ANG line in southern B.C. As of year-end, construction of the Western leg was complete other than for a short pipe section, tie-in connections and field testing and clean-up.

Construction on the Eastern leg, some 635 km of 1066 mm diameter pipe, from Caroline, Alberta to Monchy, Saskatchewan is scheduled to start in 1981.

Permission to construct loops in the United States from the border point to Stanfield, Oregon to tie into operating U.S. systems was given by the Federal Energy Regulation Commission on 16 June 1980. It is estimated that the U.S. section will be completed by May, 1981 to allow for deliveries of additional Western Canadian gas to the U.S. markets.

During 1980 Foothills carried out a series of "burst tests" in Northern Alberta on 1219 mm and 1422 mm O.D. pipe to evaluate the fracture arrest characteristics of the project pipe.

SUMMARY OF 1980 PIPELINE INCIDENTS

	Gas Pipelines	Oil & Product Pipelines	High Vapour Pipelines	Total
Equipment Failure	1	8	2	11
External Corrosion	2	3		5
Internal Corrosion		10		10
Settlement/Rock Slides		3		3
Other	2	2		4
Damage During Construction by Others	2	3		5
Defective Welds	<u>3</u>	<u>4</u>	<u>—</u>	<u>7</u>
	10	33	2	45

Inspection and Environmental Surveillance

The Board has a policy of regularly inspecting operating procedures and construction activities of companies under its jurisdiction. This is done to ensure that environmental protection measures are being followed, employee and public safety is being respected, and facilities are being constructed and maintained in a manner which meets the Board's standards. In 1980, priority for inspection was put on construction activities which were either carried out in highly populated areas or in environmentally sensitive regions or which involved the transmission of toxic fluids.

The Fort St. John upgrade and the Junior Sierra projects by Westcoast Transmission Company, the pipe replacement program by Interprovincial Pipe Line Limited, and the Maple to Brampton looping and the Thorne lateral projects by TransCanada PipeLines Limited, all received full inspection. The extension from Thorne to Temiscaming by Champion Pipeline Corporation received considerable inspection, as did the still-to-be-completed Ottawa lateral pipe replacement project by Trans-Northern Pipe Line Company. Westcoast's Quesnel mainline loop upgrading, Coquihalla Canyon highway crossing installations, Pine Pass mainline relocation, mainline looping projects, Taylor sulphur plant expansion, meter station installations, and gas turbine replacement projects all received inspection.

Inspection also extended to operational activities such as pigging programs and facilities such as

compressors, pump stations, and gas processing plants, to ensure compliance with applicable regulations. Post-construction monitoring was carried out on lines operated by Cochin, Interprovincial, Trans-Northern and Westcoast as well as at several former pipeline break sites, to document the degree of environmental recovery.

ELECTRICITY

At the end of 1980 Canada's total net installed electrical generating capability was approximately 78 000 MW, of which hydroelectric plants accounted for about 46 430 MW, conventional thermal stations 26 517 MW and nuclear power 5 064 MW. Planned changes in 1980 were additions of approximately 2 547 MW of hydroelectric and 1 300 MW of conventional thermal generation and a decrease of 184 MW in nuclear capability. Total generation of electricity in 1980 is estimated to have been 366 585 GW·h, up about four percent over 1979. Of this, approximately 68 percent was supplied from hydroelectric generation, 22 percent from conventional thermal generation and 10 percent from nuclear generation.

International and Interprovincial Transfers of Electricity

Gross exports of electricity in 1980 were 30 180 GW·h (31 378 GW·h in 1979) and imports were 2 940 GW·h (1 792 GW·h in 1979), resulting in net exports of 27 240 GW·h (29 606 GW·h in 1979). These net exports constituted about eight percent of total Canadian generation (about nine percent in 1979).

Export revenues of about \$794 million (\$739 million in 1979) and import costs of \$3 million (\$1 million in 1979) resulted in a net revenue of approximately \$791 million (\$738 million in 1979).

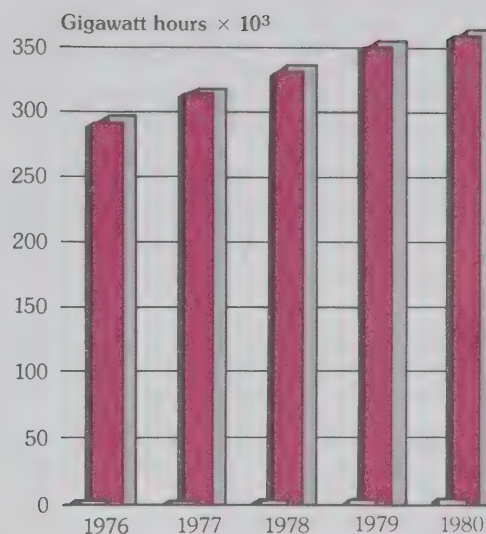
In 1980, total Canadian electricity exports were 3.8 percent lower than in 1979 but earned 7.4 percent higher revenue. Of the major utilities holding export licences, Hydro-Québec showed the largest increase in exports during 1980 over 1979. Its export quantities increased six percent while its revenue was 48 percent higher. Ontario Hydro and The New Brunswick Electric Power Commission continued at about the same level as 1979 with slightly decreased

Electricity Supply

Figure 9

	1976	1977	1978	1979(p)	1980(e)
Total Canadian Generation	294.043	317.196	336.337	352.375	366.033
Imports from United States	3.590	2.690	2.092	1.792	3.164
Total Supply	297.633	319.886	338.429	354.167	369.197

(p) preliminary (e) estimates

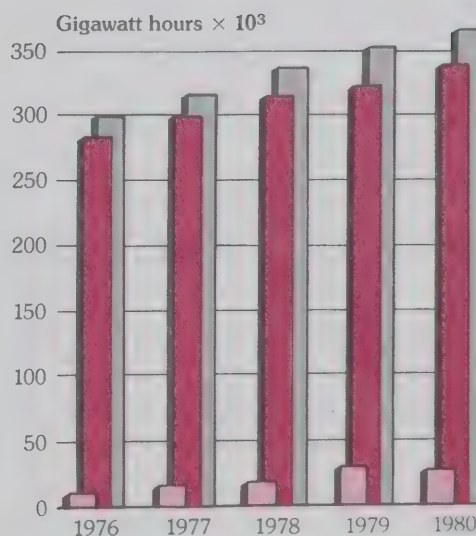
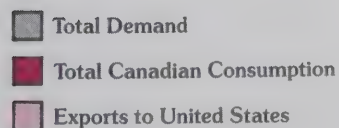


Electricity Demand

Figure 10

	1976	1977	1978	1979(p)	1980(e)
Total Canadian Consumption	284.829	299.929	316.827	322.789	340.697
Exports to United States	12.804	19.957	21.602	31.378	28.500
Total Demand	297.633	319.886	338.429	354.167	369.197

(p) preliminary (e) estimates



quantities and increased revenues in each case. The higher revenues reflect the increasing cost of oil-fired generation in the United States.

Poor water conditions in the west limited exports by B.C. Hydro, Manitoba Hydro and, to a lesser extent, Cominco. During 1980, Manitoba Hydro commissioned a new 500 kV international power line which greatly increased its transfer capacity with U.S. utilities. Due to the poor water conditions, Manitoba Hydro used its international power lines to import relatively inexpensive energy at night and, in turn, export high-value energy during the peak hours of the day.

Returns submitted to the Board by the major exporting utilities showed that of the exports over the major system interconnections in 1980, 48 percent of the energy came from hydro generation, 40 percent from imported coal, 10 percent from imported oil, and two percent from nuclear and Canadian fossil fuel.

Before electricity can be sold to United States markets it must be offered to neighbouring Canadian markets and be found to be surplus to Canadian requirements. For these reasons the Board monitors Canadian power generation and transfers although it does not regulate these matters.

Electricity supply and demand are tabulated and displayed in Figures 9 and 10. Figure 11 shows exports and imports in 1980 as well as interprovincial transfers for the 12 months ending October 1980.

New certificates of public convenience and necessity and related orders issued during the year are tabulated in Appendices E-I and E-II.

New licences to export power and energy and related orders issued during the year are tabulated in Appendices E-III and E-IV.

Exports of electric energy under each licence and order during the year are tabulated in Appendix E-V and the total electric energy trade is shown in Appendix E-VI.

Other Activities

Staff provided advisory services to other departments

and outside agencies in various areas in 1980 including an assessment of the potential export value of surplus energy from the Gull Island Hydro project in Labrador at the request of the Department of Energy, Mines & Resources. Staff also provided advice to Privy Council Office on electric power matters. A staff member was seconded to Atomic Energy of Canada Limited to assist in studies related to existing and potential electricity surplus while another is acting as an advisor to the Nova Scotia Tidal Power Corporation on an updated Fundy Tidal Power Study.

Staff made a presentation on Tidal Power before the Special Committee of the House of Commons on Alternative Energy and Oil Substitution and presented a paper to the World Energy Conference on the status of cost-benefit analysis of the reliability of electricity supply.

Work was initiated on incorporating very fast techniques for the simulation of generation production cost developed by Board Staff into the WASP (Wien Automatic System Planning) generation program.

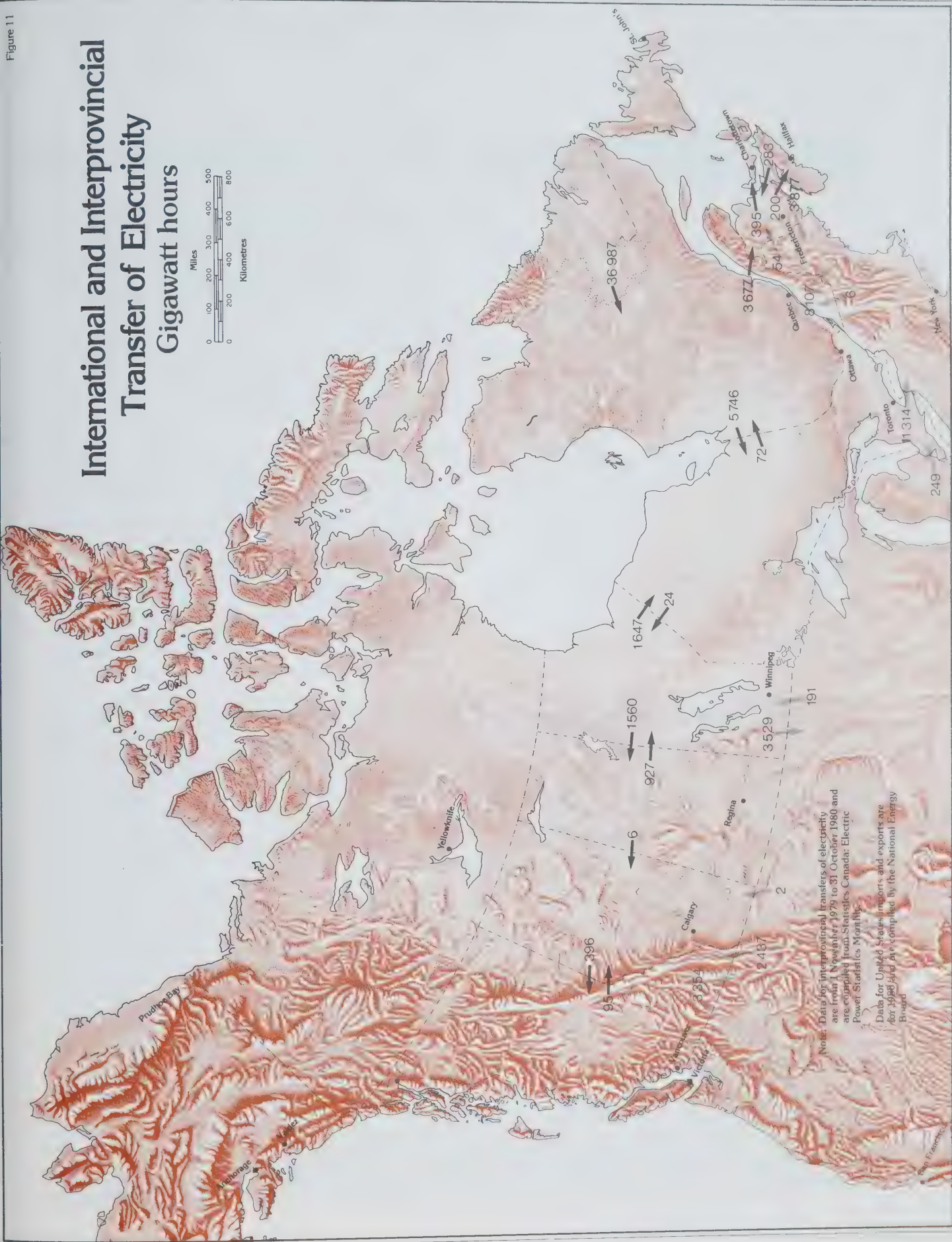
FINANCIAL REGULATORY MATTERS

The Board's involvement in pipeline tariff determination continued to grow in 1980 with increasing frequency of applications made in respect of tolls and tariffs. This increasing frequency is largely attributable to changes in factors affected by throughput, wage settlements and price inflation together with the continuing emergence of regulatory issues such as the impact of non-regulated activities upon a company's transmission charges. It is expected that this trend will continue in the coming years with the increasing number and complexity of regulatory issues arising from economic and other factors of change.

Under the provisions of the Petroleum Administration Act and Regulations, audits were conducted of the oil and oil product exports reported to the Board, including the export charges levied and paid thereon.

Where warranted, adjustments to the charges paid were made which gave rise to either the assessment of additional charges or the refund of export charge overpayments. During 1980, the Board collected and

International and Interprovincial Transfer of Electricity



transmitted to the Receiver General approximately \$878.6 million. The program for the audit of licensed exports of propane and butanes was continued in 1980.

During the year the Board maintained its surveillance of the accounting and financial activities of 24 oil and gas pipeline companies under its jurisdiction. This was accomplished through the analysis of periodic and/or special reports required by the Board in conjunction with ongoing field audits to verify compliance with the Board's Uniform Accounting Regulations. Special audits were also carried out to measure compliance with specific directives issued by the Board in relation to accounting and rate-making matters such as the treatment to be accorded particular items of rate base or cost of service. The Toll Information Regulations, passed in April 1979 under the authority of section 88 of the National Energy Board Act (SOR/79-319), enable the Board to obtain information directly from the pipeline companies falling within its jurisdiction so as to be able to analyse and compare the actual operating results of companies with the estimates used as a basis for fixing the tolls and tariffs giving rise to those results.

The Board is continuing the internal review of its regulatory and surveillance procedures with the object of improving communications between itself and applicants and intervenors in connection with applications made under Part IV of the National Energy Board Act. As a result of this review the National Energy Board Rules of Practice and Procedure were amended (SOR/78-667, 22 August 1978) to include regulations pertaining to the information required to be filed by a gas pipeline company applying for an order fixing tolls or tariffs under Part IV of the Act. Development of similar amendments applying to oil pipeline companies continues, their completion being expected in 1981.

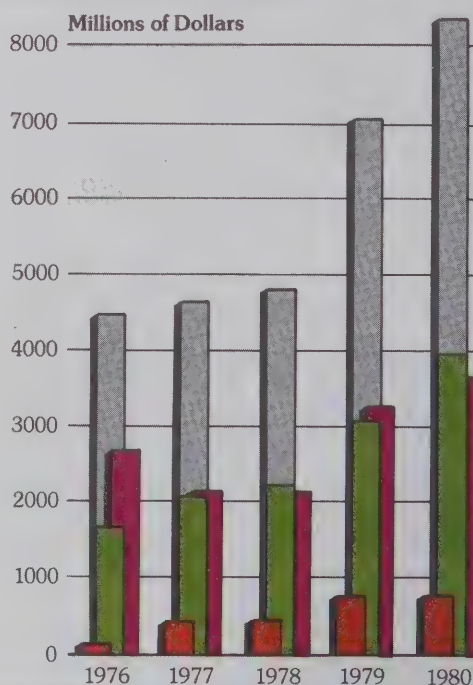
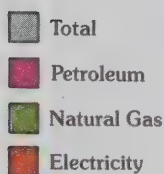
During 1980, the Board initiated a three-level toll adjustment procedure whereby routine throughput and capital cost factors can be rapidly translated into tariff adjustments once the Board has been satisfied as to the governing particulars. Second level factors require the company to advise interested parties of factor particulars, which may elicit their reaction for Board consideration and may result in a public hearing. Third level factors automatically require a public hearing on such items as rate base and rate of return. The procedure will be tested throughout 1981.

Dollar Value of Exports of Oil, Gas and Electricity (Gross)

Figure 12

	1976	1977	1978	1979(p)	1980(e)
Petroleum	2 689.6	2 132.3	2 105.8	3 259.9	3 653.1
Natural Gas	1 631.7	2 075.9	2 207.7	3 063.1	3 961.6
Electricity	173.8	419.3	478.6	738.5	740.6
Total	4 495.1	4 627.5	4 792.1	7 061.5	8 355.3

(p) preliminary (e) estimates



and adjusted and extended as results and circumstances dictate.

During 1980, the Board also recognized the need for amendments to the Oil and Gas Uniform Accounting Regulations to update them in respect of currently accepted accounting principles, practices, and terminology. Work in this area will continue in 1981.

ECONOMIC MATTERS

The Board received evidence relating to the economic impact, the economic viability, the net economic benefit and the Canadian content and industrial benefit of proposed pipelines and exports of gas under sections 44 and 83 of the Act. Economic aspects of the joint TransCanada/Q & M application for facilities to extend natural gas pipeline service within Quebec and into New Brunswick and Nova Scotia received a great deal of attention during 1980. As well the application by Interprovincial for an oil pipeline from Norman Wells in the Northwest Territories to the existing terminus in Alberta raised significant regional socio-economic concerns. During the year the Board further developed its own economic models used in assessing this evidence.

The Board began preparations for the development of long-term macroeconomic and energy demand forecasts for the All Energy Inquiry. Additional steps were taken to improve the Board's demand forecasting capabilities. This included the adoption of an updated macroeconomic model, a revision of the Board's energy price projection model, and the undertaking of various studies as a detailed reexamination of the demand for LPG's. A consultant was retained for the construction of a model to forecast truck gasoline and diesel consumption as an extension to the Board's model to forecast passenger car gasoline consumption. In preparation for the All Energy Hearing, the Board continued to undertake studies with regard to economic factors affecting the supply of oil and natural gas. Attention was also paid during the year to the short-term economic outlook, particularly the outlook for inflation and wages and their effect on pipeline transmission costs.

The Board continued its efforts to maintain and improve the quality of energy data in Canada. During 1980, this effort included further computerization of the Board's energy databases, liaison with federal,

provincial and industrial sources of energy data, and completion of conversion of energy data into metric units.

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APPENDIX G-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR GAS PIPELINES ISSUED DURING 1980

APPLICANT	FACILITIES	ESTIMATED COST	HEARD	ISSUED	CERTIFICATE NO.
TransCanada PipeLines Limited	Approximately 40 km of 168.3 mm O.D. pipeline – North Bay to Temiscaming, Ontario.	\$ 4,325,800	20-21 Nov. 1979	11 Feb. 1980	GC-62
TransCanada PipeLines Limited	Approximately 34 km of 914 mm O.D. pipeline – Maple to Lisgar, Ontario	\$ 26,934,000 (1979 \$)	Nov. 27-28, 1979 and Jan. 8, 1980	March 28, 1980	GC-63
TransCanada PipeLines Limited	Approximately 40 km of 762 mm O.D. pipeline – St. Lazare to Boisbriand and 14 km of 508 mm O.D. pipeline Boisbriand Lateral all in Quebec.	\$ 33,997,637	25 Sept. 1979 - 30 Jan. 1980	March 21, 1980	GC-64
TransCanada PipeLines Limited	Approximately 1493 km of mainline, laterals and sublaterals in Quebec.	\$263,000,000	25 Sept. 1979 - 30 Jan. 1980	May 16, 1980	GC-65
TransCanada PipeLines Limited	Approximately 475 km of looping in Saskatchewan, Manitoba and Ontario plus additional compression facilities	\$359,561,000	9-23 April, 1980	July 11, 1980	GC-66

APPENDIX G-II

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1980 CLASS "B" CONSTRUCTION

APPLICANT	FACILITIES	ESTIMATED COST	ISSUED	ORDER NO.
Alberta Natural Gas Company Ltd.	New compressor unit to replace four existing compressors at Compressor Sta 1, Crowsnest, British Columbia	\$ 6,648,000	March 13, 1980	XG-4-80
Alberta Natural Gas Company Ltd.	Galloway Measuring Station - B.C.	\$ 35,280	July 25, 1980	XG-8-80
Champion Pipe Line Corporation Limited	1.9 km of 219.1 mm O.D. pipeline near Thorne, Ontario (part of TPCL North Bay to Temiscaming project)	\$ 265,500	Feb. 11, 1980	XG-3-80
Minell Pipeline Ltd.	Farm Tap in St. Lazare, Manitoba	\$ 1,600	Aug. 20, 1980	XG-10-80
Union Gas Limited	Metering Facilities at Ojibway Station - Windsor, Ontario	\$ 69,600	Nov. 12, 1980	XG-11-80
TransCanada PipeLines Limited	Delivery Point Facilities - Sault Ste. Marie Airport, Ontario	\$ 21,300	Jan. 31, 1980	XG-1-80
TransCanada PipeLines Limited	Sales Tap - Burk's Falls, Ontario.	\$ 40,100	July 22, 1980	XG-6-80
TransCanada PipeLines Limited	Additional compressor unit at Compressor Sta. 129, near Maple, Ontario.	\$ 2,655,000	Dec. 10, 1980	XG-12-80
TransCanada PipeLines Limited	Approximately 0.1 km of 914 mm O.D. pipeline at Emerson, Manitoba	\$ 227,011	Dec. 19, 1980	XG-13-80

APPENDIX G-II (cont'd)

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1980 CLASS "B" CONSTRUCTION

APPLICANT	FACILITIES	ESTIMATED COST	ISSUED	ORDER NO.
Westcoast Transmission Company Limited	1.8 km of 168.3 mm O.D. pipeline as part of Ft. St. John gathering system and additional compression facilities at Stoddart Booster Station No. 10, all in British Columbia	\$ 2,022,300	Feb. 6, 1980	XG-2-80
Westcoast Transmission Company Limited	Doe Creek Meter Station (No. 42) near Taylor, British Columbia	\$ 40,400	April 17, 1980	XG-5-80
Westcoast Transmission Company Limited	Approximately 37 km of 914.4 mm O.D. looping at various locations along existing 762.0 mm O.D. mainline in British Columbia	\$21,582,000	July 31, 1980	XG-9-80

CLASS "C" CONSTRUCTION

APPLICANT	FACILITIES	ESTIMATED COST	ISSUED	ORDER NO.
Alberta Natural Gas Company Ltd.	Compressor, measuring and regulating additions to structures and equipment, and contingencies	\$ 722,964	April 30, 1980	XGM-5-80
Canadian-Montana Pipe Line Company	Right-of-Way clean-up	\$ 31,000	June 18, 1980	XGM-9-80
ICG Transmission Limited	Installation of line heater and contingency	\$ 55,500	April 2, 1980	XGM-3-80
Niagara Gas Transmission Limited	Relocation and replacement at Chaudière Crossing of Ottawa River	\$ 60,500	Nov. 5, 1980	XGM-14-80
TransCanada PipeLines Limited	All	\$34,791,829		
	Pipe replacement, corrosion protection, compressor metering and regulating station modifications, contingency etc.	\$27,323,898	March 19, 1980	XGM-2-80
	Crossings, pipe replacement, corrosion protection, buildings, warehouses, etc.	\$ 1,817,999	April 17, 1980	XGM-4-80
	Replacement Valves	\$ 3,386,286	July 30, 1980	XGM-10-80
	Contingency	\$ 1,000,000	Sept. 11, 1980	XGM-11-80
	Foundations at Compressor Station 41 Manitoba	\$ 466,752	Sept. 11, 1980	XGM-12-80
	Valve operators and automatic closing devices	\$ 796,894	Oct. 15, 1980	XGM-13-80
Westcoast Transmission Company Limited	All	\$37,746,613		
	Contingency	\$ 1,000,000	March 13, 1980	XGM-1-80
	B.C. Trunk Line Upgrading	\$ 1,141,000	May 15, 1980	XGM-6-80
	Fort St. John Line Upgrading	\$ 1,257,500	May 15, 1980	XGM-7-80
	Various projects for gathering and transmission facilities as well as products extraction plants and general services, etc.	\$32,082,368	June 4, 1980	XGM-8-80
	Various projects for gathering and transmission facilities as well as products extraction plants and general services	\$ 2,265,745	Dec. 3, 1980	XGM-15-80

APPENDIX G-III

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1980.

TYPE OF LICENCE	LICENSEE	LICENCE NUMBER	POINT OF EXPORT	TERM OF LICENCE		MAXIMUM		
				FROM	TO	Daily 10 ³ m ³	Annual 10 ⁶ m ³	Term 10 ⁶ m ³
New Natural Gas Export Licences	1. Pan-Alberta Gas Ltd.	GL-62	Monchy, Sask.	84-11-01	85-10-31	6 232.1	2 073.6	7 914.8
				85-11-01	86-10-31	12 464.2	4 147.2	
				86-11-01	87-10-31	5 091.3	1 694.0	
	2. Pan-Alberta Gas Ltd.	GL-63	Kingsgate, B.C.	80-11-01	83-10-31	931.5 ^(a)	340.0 ^(a)	6 220.8 ^(b)
				83-11-01	84-10-31	1 869.7	622.1	
				84-11-01	85-10-31	3 739.4	1 244.2	
				85-11-01	86-10-31	5 609.0	1 866.2	
				86-11-01	87-10-31	7 478.6	2 488.3	
	3. Union Gas Limited	GL-64	Windsor, Ont. ^(c)	80-11-01	85-10-31	1 100.0	284.0	1 420.0

TYPE OF ORDER	LICENSEE	ORDER NUMBER	POINT OF EXPORT	TERM OF ORDER		MAXIMUM
				FROM	TO	
New Ethane Export Order	1. Dome Petroleum Limited	GO-1-80	Windsor, Ont.	80-05-30	81-05-29	116 x 10 ³ m ³
New Ethylene Export Orders	1. Dow Chemical of Canada Limited	EYL-1-80	Samia, Ont.	80-02-07	80-12-31	9 000 000 kilograms
	2. Dow Chemical of Canada Limited	EYL-2-80	Samia, Ont.	81-01-01	81-12-31	9 000 000 kilograms
New Propane Export Orders	1. Dome Petroleum Limited	EPR-921-80	Samia, Ont.	80-01-25	80-06-30	Same volume as was imported as part of an NGL mix.
	2. Imperial Oil Limited	EPR-922-80	Gretna, Man.	80-09-01	90-08-31	No maximum export volume so long as the same propane is imported within 30 days.
	3. Amoco Canada Petroleum Co. Ltd.	EPR-923-80	Samia, Ont.	80-07-29	80-12-31	Same volume as was imported as part of an NGL mix.
New Butanes Export Orders	1. Dome Petroleum Limited	EBU-910-80	Samia, Ont.	80-01-25	80-06-30	Same volume as was imported as part of an NGL mix.
	2. Imperial Oil Limited	EBU-911-80	Gretna, Man.	80-09-01	90-08-31	No maximum export volume so long as the same butanes are imported within 30 days.
	3. Amoco Canada Petroleum Co. Ltd.	EBU-912-80	Samia, Ont.	80-07-29	80-12-31	Same volume as was imported as part of an NGL mix.

- (a) The total volume of gas exported during the period 80-11-01 to 83-10-31 shall reduce by the same amount the total volume of gas authorized to be exported during the balance of the term of this licence.
- (b) For the period 85-11-01/87-10-31 1 588 x 10⁶ m³ is conditional and could be reduced should deliverability be insufficient to meet Canadian requirements plus authorized exports.
- (c) This licence is for the exportation of natural gas near Windsor, Ontario by displacement of synthetic natural gas produced by Petrosar Ltd. in Samia, Ontario.

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1980.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	DATE OF ISSUE	COMMENTS
Orders Amending Existing Natural Gas Export Licences.	1. TransCanada PipeLines Limited	AO-14-GL-1	80-01-10	Amendment establishing that the price to be received for the gas exported, including all transmission charges, shall be on and after the 17th day of February, 1980, not greater than and not less than the Canadian dollar equivalent of \$4.17 in United States currency per GJ of gross heating value.
	2. Alberta and Southern Gas Co. Ltd.	AO-15-GL-3	80-01-10	See Item 1.
	3. Westcoast Transmission Company Limited	AO-16-GL-4	80-01-10	See Item 1.
	4. Canadian-Montana Pipe Line Company	AO-17-GL-5	80-01-10	See Item 1.
	5. Niagara Gas Transmission Limited	AO-25-GL-6	80-01-10	See Item 1.
	6. Alberta and Southern Gas Co. Ltd.	AO-12-GL-16	80-01-10	See Item 1.
	7. Canadian-Montana Pipe Line Company	AO-15-GL-17	80-01-10	See Item 1.
	8. TransCanada PipeLines Limited	AO-22-GL-18	80-01-10	See Item 1.
	9. TransCanada PipeLines Limited	AO-23-GL-18	80-05-08	Amendment, which provides for the export of the gas at a point near Niagara Falls, Ontario in addition to the existing point of export near Emerson, Manitoba for the period ending 80-10-31.
	10. TransCanada PipeLines Limited	AO-24-GL-18	80-08-15	Amendment, which removes the daily volume limitation on gas exports during the period 80-11-01 to 81-10-31. The amendment also provides for the export of gas at a point near Niagara Falls, Ontario in addition to the existing point of export near Emerson, Manitoba for the period ending 81-10-31.
	11. TransCanada PipeLines Limited	AO-16-GL-19	80-01-10	See Item 1.
	12. TransCanada PipeLines Limited	AO-17-GL-19	80-06-26	Amendment, which removes the daily volume limitation on gas exports.
	13. TransCanada PipeLines Limited	AO-25-GL-20	80-01-10	See Item 1.
	14. TransCanada PipeLines Limited	AO-26-GL-20	80-08-15	Amendment, which removes the daily volume limitation on gas exports during the period 80-11-01 to 81-10-31.
	15. Alberta and Southern Gas Co. Ltd.	AO-14-GL-24	80-01-10	See Item 1.
	16. Canadian-Montana Pipe Line Company	AO-18-GL-25	80-01-10	See Item 1.
	17. ICG Transmission Limited	AO-14-GL-28	80-01-10	See Item 1.

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1980.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	DATE OF ISSUE	COMMENTS
	18. ICG Transmission Limited	AO-15-GL-29	80-01-10	Amendment establishing that the price to be received for the gas exported, including all transmission charges, shall be on and after the 17th day of February, 1980, not greater than and not less than the Canadian dollar equivalent of \$3.40 in United States currency per GJ of gross heating value.
	19. Alberta and Southern Gas Co. Ltd.	AO-12-GL-35	80-01-10	See Item 1.
	20. Canadian-Montana Pipe Line Company	AO-13-GL-36	80-01-10	See Item 1.
	21. TransCanada PipeLines Limited	AO-18-GL-37	80-01-10	See Item 1.
	22. TransCanada PipeLines Limited	AO-19-GL-37	80-08-15	Amendment, which removes the daily volume limitation on gas exports during the period 80-11-01 to 81-11-31.
	23. TransCanada PipeLines Limited	AO-12-GL-38	80-01-10	See Item 1.
	24. TransCanada PipeLines Limited	AO-12-GL-39	80-01-10	See Item 1.
	25. Westcoast Transmission Company Limited	AO-23-GL-41	80-01-10	See Item 1.
	26. TransCanada PipeLines Limited	AO-16-GL-43	80-01-10	See Item 1.
	27. TransCanada PipeLines Limited	AO-17-GL-43	80-08-14	Amendment, which allows some natural gas currently exported for fuel and other uses to be sold in the export market as sales gas.
	28. TransCanada PipeLines Limited	AO-18-GL-43	80-08-15	Amendment, which extends to 81-10-31 the period during which gas exported under Licence GL-43 may be used as fuel gas for the transport of gas exported under Licence GL-18.
	29. Union Gas Limited	AO-2-GL-50	80-02-07	Amendment, which provides for a change in the method by which the export price is determined.
	30. Canadian-Montana Pipe Line Company	AO-1-GL-52	80-01-10	See Item 1.
	31. Canadian-Montana Pipe Line Company	AO-1-GL-53	80-01-10	See Item 1.
	32. Columbia Gas Development of Canada Ltd.	AO-1-GL-54	80-01-10	See Item 1.
	33. Niagara Gas Transmission Limited	AO-1-GL-55	80-01-10	See Item 1.
	34. ProGas Limited	AO-1-GL-56	80-01-10	See Item 1.
	35. ProGas Limited	AO-2-GL-56	80-05-08	Amendment, which provides for the export of the gas at a point near Monchy, Saskatchewan, in addition to the existing point of export near Emerson, Manitoba.
	36. Sulpetro Limited	AO-1-GL-57	80-01-10	See Item 1.

APPENDIX G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1980.

TYPE OF ORDER	LICENSEE	ORDER NUMBER	DATE OF ISSUE	COMMENTS
Orders Amending Existing Ethylene Export Orders	37. Sulpetro Limited	AO-2-GL-57	80-08-15	Amendment, which removes the daily volume limitation on gas exports during the period ending 81-10-31.
	38. Pan-Alberta Gas Ltd.	AO-1-GL-58	80-01-10	See Item 1.
	39. Pan-Alberta Gas Ltd.	AO-2-GL-58	80-04-14	Amendment, which provides for a twelve-month extension of the licence term to 88-10-31, and which provides for the exportation of certain extended-period exports of make-up volumes during the period 86-11-01 to 88-10-31.
	40. Pan-Alberta Gas Ltd.	AO-1-GL-59	80-01-10	See Item 1.
	41. Pan-Alberta Gas Ltd.	AO-2-GL-59	80-04-14	Amendment, which provides for a twelve-month extension of the licence term to 88-10-31, and which provides for the exportation of certain extended-period exports of make-up volumes during the period 87-11-01 to 88-10-31.
	42. TransCanada PipeLines Limited	AO-1-GL-60	80-01-10	See Item 1.
	43. Consolidated Natural Gas Limited	AO-1-GL-61	80-01-10	See Item 1.
	44. Consolidated Natural Gas Limited	AO-2-GL-61	80-04-14	Amendment, which provides for the export of the gas at a point near Monchy, Saskatchewan in addition to the existing point of export near Emerson, Manitoba.
	1. Esso Chemical Canada	AO-1-EYL-2-79	80-02-07	Amendment, which varies the minimum export price.
	1. Western Decalta Petroleum (1977) Limited	AO-5-MO-43-75	80-01-10	An amendment establishing that the price to be received for the gas exported, including all transmission charges, shall be on and after the 17th day of February, 1980, not greater than and not less than the Canadian dollar equivalent of \$4.17 in United States currency per GJ of gross heating value.
Orders Amending Existing Natural Gas Export Orders				

TYPE OF ORDER	LICENSEE	ORDER NUMBER	POINT OF EXPORT	TERM OF ORDER		MAXIMUM
				FROM	TO	
New Liquefied Natural Gas Export Orders	1. Gaz Métropolitain, inc. ^(a)	GO-2-80	Montreal, P.Q.	80-10-01	81-05-31	2 040 x 10 ³ m ³
Orders - Natural Gas Export	1. Gaz Métropolitain, inc. ^(b)	GO-4-80	Niagara Falls, Ont.	80-12-23	81-02-20	13 326 x 10 ³ m ³

- (a) This Order authorizes the export of a liquid volume of 2 933 m³ of LNG which is approximately 2 040.3 x 10³ m³ @ 37.89 MJ/m³ gas equivalent.
(b) This Order authorizes the export of natural gas equivalent to the volume of LNG imported, on a heat content basis, pursuant to import Order GO-3-80.

APPENDIX G-IV

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1980

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM		
			TO	FROM	Daily 10 ³ m ³	Annual 10 ⁶ m ³	Term 10 ⁶ m ³
NATURAL GAS							
1. TransCanada PipeLines Limited	GL-1 (AO-14)	Emerson, Man.	60-04-11	81-05-14	6 317.1	2 096.3	39 942.3
2. Alberta & Southern Gas Co. Ltd.	GL-3 (AO-15)	Kingsgate, B.C.	61-10-31 86-10-31	86-10-30 87-10-31	12 995.4 3 248.9	4 341.8 1 085.5	109 467.8
3. Westcoast Transmission Company Limited	GL-4 (AO-16)	Kingsgate, B.C.	61-12-10 81-12-10 82-11-01 84-11-01 85-11-01 86-11-01	81-12-09 82-10-31 84-10-31 85-10-31 86-10-31 87-10-31	4 305.8 4 305.8 4 305.8 3 229.4 2 152.9 1 076.5	1 444.7 1 300.0 1 444.7 1 083.5 722.4 361.2	35 250.9
4. Canadian-Montana Pipe Line Company	GL-5 (AO-17)	Cardston, Alta.	61-10-31 86-10-31	86-10-30 87-10-31	1 019.8 255.0	310.2 77.6	7 832.3
5. Niagara Gas Transmission Limited	GL-6 (AO-25)	Cornwall, Ont.	62-09-07	87-06-30	849.8	184.1	3 433.0
6. Alberta & Southern Gas Co. Ltd.	GL-16 (AO-12)	Kingsgate, B.C.	66-11-01 67-11-01	67-10-31 89-10-31	3 204.6 6 409.2	1 059.9 2 119.8	45 721.1
7. Canadian-Montana Pipe Line Company	GL-17 (AO-15)	Cardston, Alta.	66-11-01 67-11-01	67-10-31 89-10-31	339.9 679.9	103.4 206.8	4 652.8
8. TransCanada PipeLines Limited	GL-18 (AO-24)	Emerson, Man.	65-11-01 66-11-01 78-12-07	68-10-31 89-10-31 81-10-31	708.2 4 277.5 (b)	226.6(a) 1 481.5 1 481.5(c)	33 993.4
9. TransCanada PipeLines Limited	GL-19 (AO-17)	Philipsburg, Que.	65-11-01	89-10-31	600.6	184.1	3 059.4
10. TransCanada PipeLines Limited	GL-20 (AO-26)	Emerson, Man.	68-11-21 78-12-07	91-10-31 81-10-31	2 662.8 (b)	909.3 909.3	21 670.8
11. TransCanada Pipelines Limited	GL-21 (AO-7) ^(d)	Emerson, Man.	68-11-05	91-10-31	N/S	7 019.1	169 967.0
12. Alberta & Southern Gas Co. Ltd.	GL-24 (AO-14)	Kingsgate, B.C.	68-11-01 69-11-01 91-11-01	69-10-31 91-10-31 93-10-31	3 427.7 6 685.4 3 835.6	1 102.0 2 206.7 1 263.4	52 177.0
13. Canadian-Montana Pipe Line Company	GL-25 (AO-18)	Cardston, Alta. Aden, Alta.	68-11-01 69-11-01 91-11-01 73-03-27 ^(e) 74-05-14 ^(f) 75-05-14 76-05-14	69-10-31 91-10-31 93-10-31 74-05-14 75-05-14 76-05-14 77-05-14	339.9 679.8 390.9 2 817.5 2 817.5 2 817.5 1 408.7	103.4 206.8 119.0 563.5 563.5 283.3 141.6	4 890.8

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1980

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM		
			TO	FROM	Daily 10 ³ m ³	Annual 10 ⁶ m ³	Term 10 ⁶ m ³
NATURAL GAS							
14. ICG Transmission Limited	GL-28 (AO-14)	Sprague, Man.	70-11-01	95-10-31	80.3	9.5	229.0
15. ICG Transmission Limited	GL-29 (AO-15)	Fort Frances, Ont.	70-11-01	95-10-31	915.6	218.5	5 462.2
16. ICG Transmission Limited	GL-30 (AO-3) ^(g)	Sprague, Man.	70-11-01 73-01-09	95-10-31 73-12-31	1 321.8 291.7	344.0 8.6	8 498.1
17. Alberta and Southern Gas Co. Ltd.	GL-35 (AO-12)	Kingsgate, B.C.	70-11-01 85-11-01 86-11-01	85-10-31 86-10-31 87-10-31	5 807.2 2 903.6 1 451.8	1 912.1 956.1 478.1	30 116.1
18. Canadian-Montana Pipe Line Company	GL-36 (AO-13)	Cardston, Alta.	70-11-01 85-11-01 86-11-01	85-10-31 86-10-31 87-10-31	339.9 170.0 85.0	103.4 51.7 25.9	1 628.5
19. TransCanada PipeLines Limited	GL-37 (AO-19)	Emerson, Man.	70-11-01 78-12-07	90-10-31 81-10-31	5 546.6 (b)	2 030.1 2 030.1	40 601.0
20. TransCanada PipeLines Limited	GL-38 (AO-12)	Emerson, Man.	70-11-01	90-10-31	1 416.4	518.4	10 368.0
21. TransCanada PipeLines Limited	GL-39 (AO-12)	Emerson, Man.	70-11-01	90-10-31	204.0	74.6	1 493.0
22. Westcoast Transmission Company Limited	GL-41 (AO-23)	Huntingdon, ^(h) B.C.	71-11-01 72-11-01 80-11-01	72-10-31 80-10-31 89-10-31	20 773.9 22 922.9 24 622.6	7 223.1 (i) (i)	142 853.3
23. TransCanada PipeLines Limited	GL-42 (AO-3) ^(d)	Emerson, Man.	71-04-15 71-11-01	71-10-31 94-10-31	N/S N/S	232.8 2 612.3	60 316.5
24. TransCanada PipeLines Limited	GL-43 (AO-18)	Emerson, Man.	71-11-01	91-10-31	N/S	481.6	9 631.5
25. Consolidated Natural Gas Limited	GL-44 ⁽ⁱ⁾	Emerson, Man.	72-03-15	92-10-31	4 249.2	1 274.8	18 951.3
26. Tenneco LNG Inc.	GL-49	St. Stephen, N.B.	(k)	(l)	32 295.0	11 820.0	(m)
27. Western Decalta Petroleum (1977) Limited	MO-49-75 (AO-5)	Coutts, Alta.	75-11-13	82-06-30	(n)	0.1	N/S
28. Canadian-Montana Pipe Line Company	GL-52 (AO-1)	Aden, Alta.	80-01-01 81-01-01 85-01-01 86-01-01 87-01-01	80-12-31 84-12-31 85-12-31 86-12-31 87-12-31	1 416.4 1 416.4 1 062.3 708.2 354.1	283.3 283.3 212.5 141.6 70.8	1 841.4

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1980

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM		
			TO	FROM	Daily 10 ³ m ³	Annual 10 ⁶ m ³	Term 10 ⁶ m ³
NATURAL GAS							
29. Canadian-Montana Pipe Line Company	GL-53(AO-1)	Cardston, Alta.	86-07-01 86-11-01	86-10-31 87-10-31	340.0 170.0	34.5 51.7 ^(o)	86.2
30. Columbia Gas Development of Canada Ltd.	GL-54(AO-1)	Huntingdon, B.C.	80-01-01 81-01-01 85-01-01 86-01-01 87-01-01	80-12-31 84-12-31 85-12-31 86-12-31 87-12-31	1 110.4 1 110.4 832.8 555.2 277.6	368.3 368.3 276.2 184.2 92.1	2 394.0
31. Niagara Gas Transmission Limited	GL-55(AO-1)	Cornwall, Ont.	80-01-01 80-11-01 84-11-01 85-11-01 86-11-01	80-10-31 84-10-31 85-10-31 86-10-31 87-10-31	350.0 350.0 262.5 600.0 300.0	89.1 89.1 66.8 136.8 68.4	717.5
32. ProGas Limited	GL-56(AO-2) ^(p)	Emerson, Man.	80-11-01 84-11-01 85-11-01 86-11-01	84-10-31 85-10-31 86-10-31 87-10-31	9 440.9 7 088.7 4 720.4 2 360.2	3 100.0 2 325.0 1 550.0 775.0	17 050.0
33. Sulpetro Limited	GL-57(AO-2)	Niagara Falls, Ont.	80-01-01 80-11-01 81-11-01	80-10-31 81-10-31 82-10-31	2 089.1 ^(q) 2 089.1 ^(q) 2 089.1	612.8 762.5 612.8	1 838.4
34. Pan-Alberta Gas Ltd.	GL-58(AO-2)	Monchy, Sask.	81-11-01 84-11-01 85-11-01 86-11-01 87-11-01	84-10-31 85-10-31 86-10-31 87-10-31 88-10-31	24 928.5 18 696.4 12 464.3 6 232.1 13 605.1 ^(r) 24 928.5 ^(r)	8 294.4 6 220.8 4 147.2 2 073.6 (r) (r)	37 324.8
35. Pan-Alberta Gas Ltd.	GL-59(AO-2)	Kingsgate, B.C.	80-11-01 84-11-01 85-11-01 86-11-01 87-11-01	84-10-31 85-10-31 86-10-31 87-10-31 88-10-31	7 478.6 5 608.9 3 739.3 1 869.9 7 478.6	2 488.3 1 866.2 1 244.2 622.1 (s)	13 685.7
36. TransCanada PipeLines Limited	GL-60(AO-1)	Emerson, Man.	80-01-01 80-11-01 84-11-01 85-11-01	80-10-31 84-10-31 85-10-31 85-12-14	6 317.1 ^(t) 6 317.1 ^(t) 4 737.8 3 158.6	800.0 2 096.3 1 572.2 139.0	10 896.4
37. Consolidated Natural Gas Limited	GL-61(AO-2) ^(p)	Emerson, Man.	80-11-01 84-11-01 85-11-01 86-11-01	84-10-31 85-10-31 86-10-31 87-10-31	5 665.6 4 249.2 2 832.8 1 416.4	2 067.9 1 551.0 1 034.0 517.0	11 373.6
38. Canadian-Montana Pipe Line Company	GO-3-79 (AO-2)	N/S	79-05-01	93-12-31	30.0	10.3	105.0
39. Pan-Alberta Gas Ltd.	GL-62	Monchy, Sask.	84-11-01 85-11-01 86-11-01	85-10-31 86-10-31 87-10-31	6 232.1 12 464.2 5 091.3	2 073.6 4 147.2 1 694.0	7 914.8

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1980

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM		
			TO	FROM	Daily 10 ³ m ³	Annual 10 ⁶ m ³	Term 10 ⁶ m ³
NATURAL GAS							
40. Pan-Alberta Gas Ltd.	GL-63	Kingsgate, B.C.	80-11-01 83-11-01 84-11-01 85-11-01 86-11-01	83-10-31 84-10-31 85-10-31 86-10-31 87-10-31	931.5 ^(u) 1 869.7 3 739.4 5 609.0 7 478.6	340.0 ^(u) 622.1 1 244.2 1 866.2 2 488.3	6 220.8 ^(v)
41. Union Gas Limited	GL-64	Windsor, Ont.	80-11-01	85-10-31	1 100.0	284.0	1 420.0
42. Gaz Métropolitain, inc.	GO-2-80	Montréal, Qué.	80-10-01	81-05-31	N/A	N/A	2.0 ^(w)
43. Gaz Métropolitain, inc.	GO-4-80	Niagara Falls, Ont.	80-12-23	81-02-21	N/A	N/A	13.3 ^(x)

- Interruptible
- Daily limitations do not apply during the period 78-12-07 to 81-10-31.
- Notwithstanding Emerson, Manitoba as the point of export, the Licensee may export volumes of gas at Niagara Falls, Ontario during the periods 1979-10-18 to 1979-12-16 and 1980-06-05 to 1981-10-31.
- This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Samia, Ontario to serve Eastern Canadian markets.
- This export actually commenced on the day when the total quantity of gas authorized by Licence GL-8 was exported (approximately June 1973).
- This amendment stipulated a maximum daily quantity of 764.9 x 10³ m³ or 12.75 x 10⁶ m³ in any calendar month during the period between 74-05-14 and the commencement of exports authorized for the period 74-05-14 to 75-05-14.
- This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
- Notwithstanding the Huntingdon, B.C. export point, the Licensee may export gas at a place near Kingsgate, B.C. during the period from 73-11-01 to 79-10-31. For the period 72-11-01 to 89-10-31, the Licensee is authorized to export an average annual quantity of gas of 7 970.3 x 10⁶ m³ or 8 389.8 x 10⁶ m³ in any consecutive twelve-month period ending on the 31st day of October.
- This licence authorizes an export near Emerson, Manitoba. The quantity of gas exported under the authority of this licence shall be equal to the quantities of gas which the licensee imports pursuant to Licence No. GLI-5.
- From the date of Initial Delivery
- Twenty years and six months after the date of the First Regular Delivery or a total term from Initial Delivery not exceeding 25 years.
- The total gas or equivalent quantity expressed in cubic metres of the liquified natural gas imported pursuant to Licence GLI-7.
- The quantity of gas that may be exported in any one month shall not be more than 28.3 x 10³ m³.
- The quantity of gas that may be exported in any consecutive twelve-month period ending on the 31st day of October under the authority of this licence together with the quantity of gas that may be exported under the authority of Licence GL-25 shall not exceed 206.8 x 10⁶ m³.
- This Licence also allows exports at Monchy, Sask. During each licence year over the period 1981-11-01/1987-10-31 the maximum exports allowed at Emerson, Manitoba is equal to the combined Emerson/Monchy point of export volumes less the actual volumes exported at Monchy, Sask.
- The Licensee may exceed the daily limitation of 2 089.1 x 10³ m³/d during the period 1980-09-25 to 1980-10-31, subject to interruption of the volumes in excess of 2 089.1 x 10³ m³/d to provide service to TransCanada's Canadian customers.
- "Additional" volumes, i.e. make-up gas equal to the difference between the authorized volume minus the actual volume exported over the 1981/82 licence period, may be exported during 1986-11-01/1987-10-31 to a maximum of 13 605 x 10³ m³/d and 4 526.8 x 10⁶ m³/a. Any "additional" volumes still left unexported in the period 1981/82 less the 1986/87 export of "additional" volumes may be exported during the "extended" period 1987-11-01/1988-10-31. "Additional" volumes authorized during 1986-11-01/1988-10-31 are subject to reduction depending on Canadian deliverability requirements.
- For the extended period 1987-11-01/1988-10-31, the Licensee may export the difference between the authorized quantity during 1980-11-01/1981-10-31 and the actual quantity exported in such period, subject to reduction should deliverability be insufficient to meet Canadian requirements and authorized exports.
- During the period ending 81-05-14, the total quantity of gas that may be exported in any one day shall not exceed the difference between 6 317.1 x 10³ m³ and the quantity of gas exported under Licence GL-1 on that day.
- The total volume of gas exported during the period 1980-11-01 to 1983-10-31 shall reduce by the same amount the total term volume of gas authorized to be exported during the balance of the term of this licence (i.e. 1983-11-01/1987-10-31).
- For the period 1985-11-01/1987-10-31, 1 588.0 x 10⁶ m³ are conditional and could be reduced should deliverability be insufficient to meet Canadian requirements and authorized exports.
- This Order authorizes the export of a liquid volume of 2 933 m³ of LNG which is approximately 2 040.3 x 10³ m³ @ 37.87 MJ/m³ gas equivalent
- This order authorizes the export of the gas equivalent at 37.47 MJ/m³ of 17 533 m³ (liquid) of LNG imported at Philipsburg, Quebec.

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1980

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUMES (m³)
			FROM	TO	
PROPANE					
1. Dome Petroleum Limited	GL-31 (AO-6)	Any point on the international border between Canada and the United States	79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01	79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31	716 983 688 571 656 190 620 476 133 254 133 254 133 254 143 809 193 016 196 984 169 047 165 873 165 079 162 098 103 968
2. Amoco Canada Petroleum Company Ltd.	GL-32 (AO-4)	Any point on the international border between Canada and the United States	79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01	79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31	92 698 92 698 92 698 92 698 92 698 92 698 92 698 92 698 92 698 92 698 92 698 92 698 92 698 92 698 92 698 77 206
3. PanCanadian Gas Products Limited	GL-34 (AO-5)	Any point on the international border between Canada and the United States	79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01	79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31	63 730 63 730 63 730 63 730 63 730 63 730 63 730 53 175 3 968
4. Dome Petroleum Limited	GL-46 (AO-3) ^(a)	Windsor, Ont.	78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01	79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31	619 047 601 587 547 619 468 254 380 952 333 333

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1980

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUMES (m ³)
			FROM	TO	
PROPANE					
5. Dome Petroleum Limited	EPR-908-77 (AO-1) ^(b)	Gretna, Man.	79-01-01 80-01-01 81-01-01	79-12-31 80-12-31 81-12-31	238 095 238 095 238 095
6. Dome Petroleum Limited	EPR-917-79 ^(c)	Any place on the international boundary between Canada and the United States	79-09-06	96-01-31	Not Specified
7. Amoco Canada Petroleum Company Limited	EPR-918-79 ^(c)	Same as EPR-917-79	79-09-06	96-01-31	Not Specified
8. PanCanadian Gas Products Limited	EPR-919-79 ^(c)	Same as EPR-917-79	79-09-06	91-01-31	Not Specified
9. Imperial Oil Limited	EPR-922-80 ^(b)	Gretna, Man.	80-09-01	90-08-31	Not Specified
10. Amoco Canada Petroleum Company Limited	EPR-923-80 ^(d)	Samia, Ont.	80-07-29	80-12-31	Not Specified

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1980

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUMES (m³)
			FROM	TO	
BUTANES					
1. Dome Petroleum Limited	EBU-1-74 (AO-3) ^(e)	Any place on the international boundary between Canada and the United States	78-04-01	79-03-31	792 462
			79-04-01	80-03-31	773 405
			80-04-01	81-03-31	689 235
			81-04-01	82-03-31	587 597
			82-04-01	83-03-31	528 837
			83-04-01	84-03-31	433 551
2. Dome Petroleum Limited	EBU-132-74 (AO-1) ^(b)	Gretna, Man.	79-01-01	79-12-31	603 129
			80-01-01	80-12-31	580 324
			81-01-01	81-12-31	556 375
			82-01-01	82-12-31	532 601
			83-01-01	83-12-31	502 284
			84-01-01	84-12-31	452 037
			85-01-01	85-12-31	437 093
			86-01-01	86-12-31	402 186
			87-01-01	87-12-31	352 812
			88-01-01	88-12-31	341 711
			89-01-01	89-12-31	315 460
			90-01-01	90-12-31	299 627
			91-01-01	91-12-31	290 273
			92-01-01	92-12-31	272 057
			93-01-01	93-12-31	265 117
			94-01-01	94-12-31	245 012
			95-01-01	95-12-31	239 724
3. Amoco Canada Petroleum Company Limited	EBU-133-74 (AO-1) ^(b)	Gretna, Man.	79-01-01	79-12-31	618 088
			80-01-01	80-12-31	575 893
			81-01-01	81-12-31	540 176
			82-01-01	82-12-31	488 674
			83-01-01	83-12-31	423 848
			84-01-01	84-12-31	374 315
			85-01-01	85-12-31	359 244
			86-01-01	86-12-31	308 345
			87-01-01	87-12-31	260 131
			88-01-01	88-12-31	239 549
			89-01-01	89-12-31	205 008
			90-01-01	90-12-31	179 455
			91-01-01	91-12-31	163 527
			92-01-01	92-12-31	135 973
			93-01-01	93-12-31	122 506
			94-01-01	94-12-31	95 286
			95-01-01	95-12-31	91 062
4. PanCanadian Gas Products Limited	EBU-134-74 (AO-1) ^(b)	Gretna, Man.	79-01-01	79-12-31	213 822
			80-01-01	80-12-31	213 822
			81-01-01	81-12-31	213 822
			82-01-01	82-12-31	213 822
			83-01-01	83-12-31	213 822
			84-01-01	84-12-31	240 550
			85-01-01	85-12-31	240 550
			86-01-01	86-12-31	240 550
			87-01-01	87-12-31	240 550
			88-01-01	88-12-31	240 550
			89-01-01	89-12-31	240 550
			90-01-01	90-12-31	240 550

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1980

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUMES (m³)
			FROM	TO	
BUTANES					
5. Imperial Oil Limited	EBU-911-80 ^(b)	Gretna, Man.	80-09-01	90-08-31	Not Specified
6. Amoco Canada Petroleum Company Limited	EBU-912-80 ^(f)	Sarnia, Ont.	80-07-29	80-12-31	Not Specified
ETHANE					
1. Dome Petroleum Limited	GL-45 (AO-5) ^(g)	Any point on the international boundary between Canada and the United States	78-04-01	79-03-31	530 325
			79-04-01	80-03-31	537 245
			80-04-01	81-03-31	547 703
			81-04-01	82-03-31	565 080
			82-04-01	83-03-31	571 399
			83-04-01	84-03-31	549 883
2. Dome Petroleum Limited	GL-47 (AO-4)	Elmore, Sask. & Windsor, Ont.	78-11-01	78-12-31	835 298
			79-01-01	79-12-31	2 211 664
			80-01-01	80-12-31	2 195 866
			81-01-01	81-12-31	2 053 688
			82-01-01	82-12-31	1 563 962
			83-01-01	83-12-31	1 405 986
			84-01-01	84-12-31	1 184 820
			85-01-01	85-12-31	458 130
3. Dome Petroleum Limited	GO-1-76 (AO-1) ^(h)	Elmore, Sask.	78-01-01	85-12-31	3 949 m³/a
4. Dome Petroleum Limited	GL-51	Elmore, Sask. & Windsor, Ont.	79-06-21	93-12-31	19 069 000 m³
5. Dome Petroleum Limited	GO-1-80	Windsor, Ont.	80-05-30	81-05-29	116 070

APPENDIX G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1980

EXPORTER	LICENCE OR ORDER NUMBER	POINT OF EXPORT	TERM OF LICENCE OR ORDER		MAXIMUM VOLUMES (m³)
			FROM	TO	
ETHYLENE					
1. Dow Chemical of Canada Limited	EYL-1-76 (AO-2)	Elmore, Sask. Samia and Windsor Ont.	80-01-01	89-12-31	158 757 340 kg/a
2. Dow Chemical of Canada Limited	EYL-2-76 (AO-1) ⁽ⁱ⁾	Elmore, Sask.	78-01-01	97-12-31	68 038 860 kg/a
3. Esso Chemical Canada	EYL-2-79 (AO-1)	Samia, and Fort Erie, Ont.	79-06-25	81-03-31	18 143 700 kg
4. Dow Chemical of Canada Limited	EYL-1-80	Samia, Ont.	80-02-07	80-12-31	9 000 000 kg
5. Dow Chemical of Canada Limited	EYL-2-80	Samia, Ont.	81-01-01	81-12-31	9 000 000 kg

(a) This is an import-export licence whereby propane imported at Samia, Ontario may be exported at Windsor, Ontario.

(b) This order authorizes an export at Gretna, Manitoba for subsequent import at Samia, Ontario.

(c) This order authorizes an export of propane at any point on the international boundary line between Canada and the United States and subsequent import of the same propane within 30 days after the day of export.

(d) This order authorizes an export at Samia, Ontario of propane that was previously imported in an NGL mix and fractionated at Amoco's Samia fractionation plant.

(e) This order authorizes an import at Samia or Windsor, Ontario for subsequent export at any place on the international boundary between Canada and the United States.

(f) This order authorizes an export at Samia, Ontario of butanes that were previously imported at Samia, Ontario in an NGL mix and fractionated at Amoco's Samia fractionation plant.

(g) This licence authorizes an export at any point on the international boundary between Canada and the United States. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Samia and Windsor, Ontario.

(h) This order authorizes an export of ethane at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

(i) This order authorizes an export of ethylene at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

APPENDIX G-V

EXPORTS OF NATURAL GAS

EXPORTER AND LICENCE / ORDER	AUTHORIZED MAXIMUM		106 m3								TOTAL AUTHORIZED EXPORTS	REMAINING(a) UNDER LICENCES
	DAILY 103m3	ANNUAL 106m3	CUMULATIVE to 75-12-31	1976	1977	1978	1979	1980	CUMULATIVE TO 80-12-31			
1. TransCanada PipeLines Limited GL-1 (AO-14)(b) 60-04-11/81-05-14	6 317.1	2 096.3	30 640.3	2 099.2	2 048.7	2 012.6	2 065.3	927.7	39 793.7	39 942.3	148.6	
2. TransCanada PipeLines Limited GL-2 (AO-7)(c)	2 745.0	585.3	1 768.1	—	—	—	—	—	1 768.1	N/S	—	
3. Alberta & Southern Gas Co. Ltd. GL-3 (AO-15)(b) 61-10-31/86-10-30 86-10-31/87-10-31	12 995.4 3 248.9	4 341.8 1 085.5	60 904.6	4 483.5	4 469.8	3 975.1	4 625.6	3 998.2	82 456.6	109 467.8	27 011.2	
4. Westcoast Transmission Company Limited GL-4 (AO-16) 61-12-10/81-12-09 81-12-10/82-10-31 82-11-01/84-10-31 84-11-01/85-10-31 85-11-01/86-10-31 86-11-01/87-10-31	4 305.8 4 305.8 4 305.8 3 229.4 2 152.9 1 076.5	1 444.7 1 300.0 1 444.7 1 083.5 722.4 361.2										
5. Canadian-Montana Pipe Line Company GL-5 (AO-17)(b)(d)(e) 61-10-31/86-10-30 86-10-31/87-10-31	1 019.8 255.0	310.2 77.6	4 391.1	308.3	220.3	387.1	408.2	207.9	5 923.0	7 832.3	1 909.3	
6. Niagara Gas Transmission Limited GL-6 (AO-25) 62-09-07/87-06-30 70-12-23/71-12-31 76-11-01/77-10-31	849.8 849.8 849.8	184.1 189.8 170.0	1 649.4	156.8	168.7	176.5	170.0	183.0	2 504.5	3 433.0	928.6	
7. Canadian-Montana Pipe Line Company GL-8 (AO-1)	2 817.5	563.5	6 232.1	—	—	—	—	—	6 232.1	6 232.1		
8. Alberta & Southern Gas Co. Ltd. GL-16 (AO-12)(b) 66-11-01/67-10-31 67-11-01/89-10-31	3 204.6 6 409.2	1 059.9 2 119.8	17 643.5	2 226.8	2 226.4	1 931.8	2 181.3	1 666.7	27 876.4	45 721.1	17 844.7	
9. Canadian-Montana Pipe Line Company GL-17 (AO-15)(b)(d)(f) 66-11-01/67-10-31 67-11-01/89-10-31	339.9 679.9	103.4 206.8	1 784.8	205.6	318.5	192.0	190.1	139.8	2 830.7	4 652.8	1 822.2	
10. TransCanada PipeLines Limited GL-18 (AO-24)(b) 65-11-22/68-10-31(g) 66-11-01/89-10-31 78-12-07/79-12-31	708.2 4 277.5 N A	226.6 1 481.5 1 481.5	10 191.2	1 206.1	1 202.8	1 210.8	2 134.1	1 929.4	17 874.5	33 993.4	16 118.9	
11. TransCanada PipeLines Limited GL-19 (AO-17)	600.6	184.1	749.4	115.2	120.8	119.6	128.7	119.6	1 353.3	3 059.4	1 706.1	
12. TransCanada PipeLines Limited GL-20 (AO-26)(b) 68-11-21/91-10-31 78-12-07/81-10-31	2 662.8 N A	909.3 909.3	6 122.8	908.2	907.3	904.2	994.4	889.6	10 726.6	21 670.8	10 944.2	
13. TransCanada PipeLines Limited GL-21 (AO-7)(h) 68-11-05/91-10-31	N S	7 019.1	42 650.8	6 189.6	5 964.2	6 013.8	5 608.2	5 314.5	71 741.1	169 967.0	98 225.9	
14. TransCanada PipeLines Limited GL-22 (AO-4)	N S	N S	73.4	—	—	—	—	—	73.4	85.0	—	
15. Westcoast Transmission Company Limited PC1955-958 (AO-2)(i) 55-06-23/65-12-31 66-01-01/77-10-02	N S 8 596.1	N S N S	38 357.4	—	—	—	—	—	38 357.4	N A	-	

APPENDIX G-V (cont'd)

EXPORTS OF NATURAL GAS

EXPORTER AND LICENCE / ORDER	AUTHORIZED MAXIMUM		106 m3								TOTAL AUTHORIZED EXPORTS	REMAINING(a) UNDER LICENCES
	DAILY 103m3	ANNUAL 106m3	CUMULATIVE to 75-12-31	1976	1977	1978	1979	1980	CUMULATIVE TO 80-12-31			
16. Westcoast Transmission Company Limited GL-23 (AO-7)(i) 66-11-01/67-10-31 67-11-01/68-02-21 68-02-22/88-10-31	2 865.4 2 865.4 5 730.7	1 045.9 696.3 2 097.4	7 283.4	—	—	—	—	—	7 283.4	42 908.7	—	
17. Alberta & Southern Gas Co. Ltd. GL-24 (AO-14)(b) 68-11-01/69-10-31 69-11-01/91-10-31 91-11-01/93-10-31	3 427.7 6 685.4 3 835.6	1 102.0 2 206.7 1 263.4	13 732.7	2 437.2	2 382.4	2 205.8	2 138.2	1 699.3	24 595.6	52 177.0	27 581.4	
18. Canadian-Montana Pipe Line Company GL-25 (AO-18)(b)(d) 68-11-01/69-10-31 69-11-01/91-10-31 91-11-01/93-10-31 73-03-27/75-05-14 75-05-14/76-05-14 76-05-14/77-05-14	339.9 679.9 390.9 2 817.5 2 817.5 1 408.7	103.4 206.8 119.0 563.5 283.3 141.6	2 605.3	392.7	198.5	144.6	146.3	21.0	3 508.4	4 890.8	1 382.4	
19. ICG Transmission Limited GL-28 (AO-14)(b) 70-11-01/95-10-31	80.3	9.5	31.5	10.4	8.8	9.6	12.1	8.9	81.3	229.0	147.7	
20. ICG Transmission Limited GL-29 (AO-15) 70-11-01/95-10-31	915.6	218.5	1 049.5	207.9	197.1	180.4	176.6	160.6	1 972.1	5 462.2	3 490.1	
21. ICG Transmission Limited GL-30 (AO-3)(i) 70-11-01/95-10-31	1 321.8	344.0	1 464.5	300.4	310.7	291.2	290.2	278.2	2 935.3	8 498.1	5 562.8	
22. Alberta & Southern Gas Co. Ltd. GL-35 (AO-12)(b) 70-11-01/85-10-31 85-11-01/86-10-31 86-11-01/87-10-31	5 807.2 2 903.6 1 451.8	1 912.1 956.1 478.1	9 643.6	1 970.1	1 972.0	1 662.1	2 089.5	1 556.8	18 894.1	30 116.1	11 222.1	
23. Canadian-Montana Pipe Line Company GL-36 (AO-13)(d) 70-11-01/85-10-31 85-11-01/86-10-31 86-11-01/87-10-31	339.9 170.0 85.0	103.4 51.7 25.9	533.1	102.8	73.4	72.3	73.2	75.1	930.0	1 628.5	698.6	
24. TransCanada PipeLines Limited GL-37 (AO-19)(b) 70-11-01/90-10-31 78-12-07/79-12-31	5 546.6 N/A	2 030.1 2 030.1	10 386.2	2 030.1	2 027.9	2 021.1	2 112.5	1 769.8	20 347.7	40 601.0	20 253.4	
25. TransCanada PipeLines Limited GL-38 (AO-12) 70-11-01/90-10-31	1 416.4	518.4	2 652.4	518.4	517.0	517.0	517.0	383.0	5 104.8	10 368.0	5 263.2	
26. TransCanada PipeLines Limited GL-39 (AO-12) 70-11-01/90-10-31	204.0	74.6	383.3	74.6	74.4	74.4	74.5	60.6	742.0	1 493.0	751.0	
27. Westcoast Transmission Company Limited GL-40 (AO-1)(i)	2 149.0	786.7	72.5	—	—	—	—	—	72.5	15 699.3	—	
28. Westcoast Transmission Company Limited GL-41 (AO-23)(i) 71-11-01/72-10-31 72-11-01/80-10-31 80-11-01/89-10-31	20 773.9 22 922.9 24 622.6	7 223.1 7 970.3 7 970.3	28 929.8	6 078.9	6 630.8	5 936.9	6 713.9	4 376.3	58 666.6	142 853.3	84 186.7	
29. TransCanada PipeLines Limited GL-42 (AO-3)(h) 71-04-15/71-10-31 71-11-01/94-10-31	N/S N/S	232.8 2 612.3	9 709.5	2 303.6	2 219.7	2 238.2	2 087.2	1 977.9	20 536.2	60 316.5	39 780.4	

APPENDIX G-V (cont'd)

EXPORTS OF NATURAL GAS

EXPORTER AND LICENCE / ORDER	AUTHORIZED MAXIMUM		106 m3								TOTAL AUTHORIZED EXPORTS	REMAINING(a) UNDER LICENCES
	DAILY 103m3	ANNUAL 106m3	CUMULATIVE to 75-12-31	1976	1977	1978	1979	1980	CUMULATIVE To 80-12-31			
30. TransCanada PipeLines Limited GL-43 (AO-18) 71-11-01/91-10-31	N/S	481.6	958.5	163.8	82.2	108.7	22.8	—	1 335.8	9 631.5	8 295.7	
31. Consolidated Natural Gas Limited GL-44 (k) 72-03-15/92-10-31	4 249.2	1 274.8	1 876.3	403.7	380.7	372.3	515.9	420.7	3 969.6	18 951.8	14 981.8	
32. Patrick T. Buckley GO-1-68 (l)	N/S	0.1	0.7	—	—	—	—	—	0.7	N/S	—	
33. Western Decalta Petroleum (1977) Limited MO-49-75 (AO-5)	N/S	0.1	—	—	—	—	—	—	—	N/S	—	
34. Union Gas Company of Canada Limited EO-2-63	N/S	N/S	1.6	—	—	—	—	—	1.6	5.7	—	
35. TransCanada PipeLines Limited EO-1-70	N/S	N/S	0.7	—	—	—	—	—	0.7	1.1	—	
36. TransCanada PipeLines Limited EO-6-70	N/S	N/S	3.5	—	—	—	—	—	3.5	3.5	—	
37. TransCanada PipeLines Limited EO-2-72	N/S	N/A	3.4	—	—	—	—	—	3.4	14.2	—	
38. TransCanada PipeLines Limited EO-5-72	1 133.1	N/S	0.6	—	—	—	—	—	0.6	1.1	—	
39. Gaz Métropolitain, inc EO-2-70 (AO-1)	N/A	N/A	4.3	—	—	—	—	—	4.3	5.5	—	
40. Gaz Métropolitain, inc EO-3-70 (AO-1)	N/A	N/A	3.1	—	—	—	—	—	3.1	4.5	—	
41. Gaz Métropolitain, inc EO-5-70 (AO-1)	N/A	N/A	17.4	—	—	—	—	—	17.4	19.1	—	
42. Gaz Métropolitain, inc EO-8-70	N/A	N/A	4.2	—	—	—	—	—	4.2	4.3	—	
43. Gaz Métropolitain, inc EO-2-71	N/A	N/A	13.9	—	—	—	—	—	13.9	20.5	—	
44. Gaz Métropolitain, inc EO-3-71	N/A	N/A	15.2	—	—	—	—	—	15.2	19.7	—	
45. Gaz Métropolitain, inc EO-4-71	N/A	N/A	2.4	—	—	—	—	—	2.4	3.4	—	
46. Gaz Métropolitain, inc EO-7-72	N/A	N/A	7.0	—	—	—	—	—	7.0	15.1	—	
47. Gaz Métropolitain, inc EO-1-73	N/A	N/A	0.3	—	—	—	—	—	0.3	5.4	—	
48. Gaz Métropolitain, inc GO-2-73	N/A	N/A	20.1	—	—	—	—	—	20.1	23.0	—	
49. TransCanada PipeLines Limited EO-1-74	4.2	N/A	2.2	—	—	—	—	—	2.2	12.7	—	
50. TransCanada PipeLines Limited EO-2-74	N/S	N/A	1.9	—	—	—	—	—	1.9	4.0	—	
51. TransCanada PipeLines Limited EO-1-75	N/A	N/A	5.9	—	—	—	—	—	5.9	13.6	—	

APPENDIX G-V (cont'd)

EXPORTS OF NATURAL GAS

EXPORTER AND LICENCE / ORDER	AUTHORIZED MAXIMUM		106 m ³								TOTAL AUTHORIZED EXPORTS	REMAINING(a) UNDER LICENCES
	DAILY 109m ³	ANNUAL 106m ³	CUMULATIVE to 75-12-31	1976	1977	1978	1979	1980	CUMULATIVE TO 80-12-31			
52. TransCanada PipeLines Limited EO-2-75	N/A	N/A	0.1	—	—	—	—	—	0.1	1.1	—	
53. TransCanada PipeLines Limited EO-1-77 (AO-1)	N/A	N/A	—	—	849.8	—	—	—	849.8	849.8	—	
54. Gaz Métropolitain, inc. GO-1-77	N/A	N/A	—	—	5.6	—	—	—	5.6	6.1	—	
55. Westcoast Transmission Company Limited EO-2-77	N/A	N/A	—	—	87.8	—	—	—	87.8	87.8	—	
56. Westcoast Transmission Company Limited EO-3-77	N/A	N/A	—	—	24.9	—	—	—	24.9	34.0	—	
57. TransCanada PipeLines Limited EO-4-77 (AO-1)	N/A	N/A	—	—	36.8	—	—	—	36.8	93.5	—	
58. Canadian-Montana Pipe Line Company EO-5-77	N/A	N/A	—	—	85.0	—	—	—	85.0	85.0	—	
59. TransCanada PipeLines Limited EO-6-77	N/A	N/A	—	—	17.0	—	—	—	17.0	17.0	—	
60. Gaz Métropolitain, inc. GO-2-77	N/A	N/A	—	—	4.3	—	—	—	4.3	4.6	—	
61. Gaz Métropolitain, inc. GO-3-77 (AO-2)	N/A	N/A	—	—	6.3	—	—	—	6.3	6.9	—	
62. Canadian-Montana Pipe Line Company GO-1-79	N/A	N/A	—	—	—	—	34.0	—	34.0	34.0	—	
63. Niagara Gas Transmission Limited GO-2-79	424.9	N/A	—	—	—	—	16.0	—	16.0	56.7	—	
64. TransCanada PipeLines Limited EO-1-79 (AO-1)	N/A	N/A	—	—	—	—	76.1	—	76.1	85.0	—	
65. TransCanada PipeLines Limited EO-2-79 (AO-1)	N/A	N/A	—	—	—	—	60.2	—	60.2	141.6	—	
66. TransCanada PipeLines Limited EO-3-79	2 840.0	N/A	—	—	—	—	—	—	—	88.0	—	
67. TransCanada PipeLines Limited EO-1-80	4 900.0	N/A	—	—	—	—	—	8.4	8.4	29.4	—	
68. TransCanada PipeLines Limited EO-2-80	14 200.0	N/A	—	—	—	—	—	7.8	7.8	42.6	—	
69. TransCanada PipeLines Limited GL-60 (AO-1) 80-01-01/80-10-31 80-11-01/84-10-31 84-11-01/85-10-31 85-11-01/85-12-14	6 317.1 6 317.1 4 737.8 3 158.6	800.0 2 096.3 1 572.2 139.0	—	—	—	—	—	800.0	800.0	10 896.4	10 096.4	
70. Canadian-Montana Pipe Line Company GL-52 (AO-1) 80-01-01/84-12-31 85-01-01/85-12-31 86-01-01/86-12-31 87-01-01/87-12-31	1 416.4 1 062.3 708.2 354.1	283.3 212.5 141.6 70.8	—	—	—	—	—	189.3	189.3	1 841.4	1 652.1	

APPENDIX G-V (cont'd)

EXPORTS OF NATURAL GAS

EXPORTER AND LICENCE / ORDER	AUTHORIZED MAXIMUM		106 m ³								TOTAL AUTHORIZED EXPORTS	REMAINING(a) UNDER LICENCES
	DAILY 103m ³	ANNUAL 106m ³	CUMULATIVE to 75-12-31	1976	1977	1978	1979	1980	CUMULATIVE TO 80-12-31			
71. Sulpetro Limited GL-57 (AO-2) (b) 80-01-01/80-10-31 80-11-01/81-10-31 81-11-01/82-10-31	2 089.1 2 089.1 2 089.1	612.8 762.5 612.8	—	—	—	—	—	238.1	238.1	1 838.4	1 600.3	
72. Consolidated Natural Gas Limited GL-61 (AO-2) 80-11-01/84-10-31 84-11-01/85-10-31 85-11-01/86-10-31 86-11-01/87-10-31	5 665.6 4 249.2 2 832.8 1 416.8	2 067.9 1 551.0 1 034.0 517.0	—	—	—	—	—	103.8	103.8	11 373.6	11 269.8	
73. Union Gas Limited GL-64 80-11-01/85-10-31	1 100.0	284.0	—	—	—	—	—	6.7	6.7	1 420.0	1 413.3	
Gross Exports			332 953.0	36 210.2	37 211.2	33 876.4	36 845.6	30 570.3	507 666.7			
Deduct Re-Exports of Imports:												
Item 31, GL-44(k)			1 876.3	403.7	380.7	372.3	515.9	420.7	3 969.6			
Item 37, EO-2-72			3.4	—	—	—	3.4	—	3.4			
Item 38, EO-5-72			0.6	—	—	—	0.6	—	0.6			
Item 49, EO-1-74			2.2	—	—	—	2.2	—	2.2			
Item 50, EO-2-74			1.9	—	—	—	1.9	—	1.9			
Item 51, EO-1-75			5.9	—	—	—	5.9	—	5.9			
Item 52, EO-2-75			0.1	—	—	—	0.1	—	0.1			
Item 66, EO-3-79			—	—	—	—	—	—	—			
Item 67, EO-1-80			—	—	—	—	—	8.4	8.4			
Item 68, EO-2-80			—	—	—	—	—	7.8	7.8			
Deduct Exports for Re-Imports:												
Item 13, GL-21(h)			42 650.8	6 189.6	5 964.2	6 013.8	5 608.2	5 314.5	71 741.1			
Item 21, GL-30(i)			1 464.5	300.4	310.7	291.2	290.2	278.2	2 935.3			
Item 29, GL-42(h)			9 709.5	2 303.6	2 219.7	2 238.2	2 087.2	1 977.9	20 536.2			
Item 34, EO-2-63			1.6	—	—	—	—	—	1.6			
Net Exports			277 236.1	27 012.8	28 336.0	24 960.9	28 344.0	22 562.9	408 452.7			

- a) It may not be possible to export volumes remaining under these licences due to restrictions on peak day and annual volumes.
b) Licences which show actual exports which exceeded the annual maximum were operating under make-up conditions which permitted the recovery of accumulated shortfalls in previous periods, and which permitted tolerance and/or temporary operating allowances.
c) This licence authorized an export of 849.8 x 10⁶m³ in the period 1970-11-01 to 1972-03-31 and an additional export of 424.9 x 10⁶m³ on an interruptible basis in the year commencing 1 November 1970.
d) Licences GL-5, GL-17, GL-25 and GL-36 authorized the licence volumes to be exported at Aden, Alberta (in addition to Cardston, Alberta) under the four licences combined, to a maximum of 2 817.5 x 10⁶m³/d, or 563.5 x 10⁶m³/a for any consecutive 12-month period ending on October 31st during the period 1976-05-11 to 1979-12-31.
e) This licence authorized an additional 84 983.5 x 10⁶m³/a for any consecutive 12-month period commencing on May 14th, during the period 1977-05-14 to 1979-12-31.
f) This licence authorized an additional 56 655.7 x 10⁶m³/a for any consecutive 12-month period commencing on May 14th, during the period 1977-05-14 to 1979-12-31.
g) Interruptible.
h) This is an export at Emerson, Manitoba for re-import at Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.
i) On the day that the first delivery of gas was made under Licence GL-41, Licences PC1955-958, GL-23 and GL-40 were revoked.
j) This is an export at Sprague, Manitoba for re-import at Rainy River, Ontario.
k) This is a re-export at Emerson, Manitoba of the volumes imported under Licence GLI-5 at Willow Creek, Saskatchewan.
l) Formerly Licence GL-7.

Figures may not total due to rounding.

— Amount too small to be expressed.

N/S Not stated

N/A Not applicable.

APPENDIX G-VI

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS IN 1980.

TYPE OF LICENCE OR ORDER	IMPORTER	ORDER NUMBER	POINT OF IMPORT	TERM OF ORDER		MAXIMUM
				FROM	TO	
Order - Natural Gas Import	1. Gaz Métropolitain, inc. ^(a)	GO-3-80	Philipsburg, P.Q.	80-12-23	81-02-21	13.3 x 10 ⁶ m ³
Orders - Emergency Natural Gas Import	1. TransCanada PipeLines Limited ^(b)	EO-1-80	Niagara Falls, Ont.	80-02-27	80-03-03	4 900 x 10 ³ m ³ /d
	2. TransCanada Pipelines Limited ^(b)	EO-2-80	Emerson, Man.	80-02-29	80-03-02	14 200 x 10 ³ m ³ /d

(a) A volume of natural gas equivalent, on a heat content basis, to the volume of LNG imported under this Order shall be exported pursuant to Order GO-4-80.

(b) These are import for re-export Orders. Volumes imported during the term of these Orders must be re-exported prior to 80-05-31.

APPENDIX G-VII

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1980.

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUME		
			FROM	TO	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	TERM 10 ⁶ m ³
Natural Gas							
1. TransCanada PipeLines Limited	GL-21(AO-7)(a)	Sault Ste-Marie and Samia, Ont.	68-11-05	91-10-31	N/S	7 019.1	169 967.0
2. ICG Transmission Limited	GL-30(AO-3)(b)	Rainy River, Ont.	70-11-01	95-10-31	1 321.8	344.0	8 498.1
3. TransCanada PipeLines Limited	GL-42(AO-3)(a)	Sault Ste-Marie and Samia, Ont.	71-04-15 71-11-01	71-10-31 94-10-21	N/S N/S	232.2 2 612.3	60 316.5
4. Consolidated Natural Gas Limited	GLI-5(AO-2)	Willow Creek, Sask.	71-03-15	92-10-31	4 249.2	1 274.8	18 951.3
5. Tenneco LNG Inc.	GLI-7	Saint John, N.B.	(c)	(d)	N/S	418.68PJ	8 373.6PJ
6. Border Utilities Limited	GO-2-66(AO-2)	Coutts, Alberta	66-06-02	85-09-14	30.0	N/S	N/S
7. Canadian Western Natural Gas Company Limited	GL-6-66(AO-3)	Coutts, Alberta	66-09-22	85-09-14	30.0	N/S	N/S
8. Gaz Métropolitain, Inc.	GO-3-80(e)	Philipsburg, Que.	80-12-23	81-02-21	N/S	N/S	13.3

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUME (m ³)
			FROM	TO	
Propane					
1. Dome Petroleum Limited	GL-46(AO-3)(f)	Samia, Ontario	78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01	79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31	619 047 601 587 547 619 468 254 380 952 333 333
Butanes					
1. Dome Petroleum Limited	EBU-1-74(AO-3)(g)	Samia, Ont. Windsor, Ont.	78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01	79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31	792 462 773 405 689 235 587 597 528 837 433 551
2. Dome Petroleum Limited	EBU-132-74(AO-1)(h)	Samia, Ont.	79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01	79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31	603 129 580 324 556 375 532 601 502 284 452 037 437 093 402 186 352 812 341 711 315 460 299 627 290 273 272 057 265 117 245 012 239 724

APPENDIX G-VII (Cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1980.

IMPORTER	LICENCE OR ORDER NUMBER	POINT OF IMPORT	TERM OF LICENCE OR ORDER		MAXIMUM IMPORT VOLUME (m ³)
			FROM	TO	
Butanes					
3. Amoco Canada Petroleum Company Limited	EBU-133-74(AO-1)(h)	Samia, Ont.	79-01-01	79-12-31	618 088
			80-01-01	80-12-31	575 893
			81-01-01	81-12-31	540 176
			82-01-01	82-12-31	488 674
			83-01-01	83-12-31	423 848
			84-01-01	84-12-31	374 315
			85-01-01	85-12-31	359 244
			86-01-01	86-12-31	308 345
			87-01-01	87-12-31	260 131
			88-01-01	88-12-31	239 549
			89-01-01	89-12-31	205 008
			90-01-01	90-12-31	179 455
			91-01-01	91-12-31	163 527
			92-01-01	92-12-31	135 973
			93-01-01	93-12-31	122 506
			94-01-01	94-12-31	95 286
			95-01-01	95-12-31	91 062
4. PanCanadian Gas Products Ltd.	EBU-134-74(AO-1)(h)	Samia, Ont.	79-01-01	79-12-31	213 822
			80-01-01	80-12-31	213 822
			81-01-01	81-12-31	213 822
			82-01-01	82-12-31	213 822
			83-01-01	83-12-31	213 822
			84-01-01	84-12-31	240 550
			85-01-01	85-12-31	240 550
			86-01-01	86-12-31	240 550
			87-01-01	87-12-31	240 550
			88-01-01	88-12-31	240 550
			89-01-01	89-12-31	240 550
			90-01-01	90-12-31	240 550
Ethane					
1. Dome Petroleum Limited	GL-45(AO-5)(i)	Samia, Ont. and Windsor, Ont.	78-04-01	79-03-31	530 325
			79-04-01	80-03-31	537 245
			80-04-01	81-03-31	547 703
			81-04-01	82-03-31	565 080
			82-04-01	83-03-31	571 399
			83-04-01	84-03-31	549 883
2. Dome Petroleum Limited	GO-1-76(AO-1) (j)	Windsor, Ont.	78-01-01	85-12-31	3 949m ³ /a
Ethylene					
1. Dow Chemical of Canada Limited	EYL-2-76(AO-1)(k)	Windsor, Ont.	78-01-01	97-12-31	68 038 860 kg/a

- (a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Samia, Ontario, to serve the Eastern Canadian market.
- (b) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
- (c) From the date of Initial Delivery.
- (d) Twenty years and six months after the date of First Regular Delivery and not exceeding 25 years.
- (e) This order authorizes an import of liquid volumes of 17 533m³ of LNG at Philipsburg, Quebec and the re-export of 13 326.0 x 10³m³ @ 37.47 MJ/m³ gas equivalent at Niagara Falls, Ontario.
- (f) This is an import-export licence whereby propane imported at Samia may be exported at Windsor, Ontario.
- (g) This order authorizes an import at Samia or Windsor, Ontario for subsequent export at any point on the international boundary between Canada and the United States.
- (h) This order authorizes an export at Gretna, Manitoba for subsequent import at Samia, Ontario.
- (i) This licence authorizes an export at any point on the international boundary between Canada and the United States. The Quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Samia and Windsor, Ontario.
- (j) This order authorizes an export of ethane at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.
- (k) This order authorizes an export of ethylene at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.
- N/S Not specified

APPENDIX G-VIII

IMPORTS OF NATURAL GAS

IMPORTER AND LICENCE / ORDER	AUTHORIZED MAXIMUM		10 ⁶ m ³								TOTAL AUTHORIZED IMPORTS	REMAINING ^(a) UNDER LICENCES
	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	CUMULATIVE to 75-12-31	1976	1977	1978	1979	1980	CUMULATIVE TO 80-12-31			
1. Coutts Gas Company Limited PC1955-1742	N/S	3.4	22.6	—	—	—	—	—	22.6	66.3	—	
2. Border Utilities Ltd. GO-2-66 (AO-2)	30.0	N/S	9.5	0.8	0.8	1.0	0.9	0.8	13.9	N/S	—	
3. Canadian Western Natural Gas Company Ltd. GO-6-66 (AO-3)	30.0	N/S	17.3	0.4	—	1.0	1.2	2.4	22.2	N/S	—	
4. Union Gas Company of Canada Limited PC1956-1848	N/S	155.8	2 055.6	—	—	—	—	—	2 055.6	N/S	—	
5. Union Gas Company of Canada Limited GLI-1	1 558.0	439.1	3 848.5	113.5	—	—	—	—	3 962.1	4 731.9(b)	—	
6. TransCanada PipeLines Limited GLI-2 (AO-2) 65-11-01/66-11-01 66-11-01/67-11-01 67-11-01/68-11-01 68-11-01/69-11-01 69-11-01/70-11-01	N/S N/S N/S N/S N/S	722.4 861.2 433.4 288.9 144.5	2 185.9	—	—	—	—	—	2 185.9	2 450.4	—	
7. Tecumseh Gas Storage Limited GLI-3	566.6	85.0	167.0	—	—	—	—	—	167.0	167.0(b)	—	
8. TransCanada PipeLines Limited GLI-4 (AO-6)	N/S	N/S	2 213.1	—	—	—	—	—	2 213.1	2 331.5	—	
9. Consolidated Natural Gas Limited GLI-5 (AO-2(c))	4 249.2	1 274.8	1 889.6	415.1	392.3	380.9	528.9	423.2	4 030.0	18 951.3	14 921.3	
10. TransCanada PipeLines Limited GL-21 (AO-7)(d)	N/S	7 019.1	42 650.8	6 189.6	5 964.2	6 013.8	5 602.7	5 288.5	71 709.6	169 967.0	98 257.4	
11. ICG Transmission Limited GL-30 (AO-3)(e)	1 321.8	344.0	1 464.5	300.4	310.7	291.2	290.2	278.2	2 935.3	8 498.1	5 562.8	
12. TransCanada PipeLines Limited GL-42 (AO-3)(d) 71-04-15/71-10-31 71-11-01/94-10-31	N/S N/S	232.8 2 612.3	9 709.5	2 303.6	2 219.7	2 238.2	2 085.2	1 968.3	20 524.4	60 316.5	39 792.1	
13. TransCanada PipeLines Limited EO-2-62	N/S	N/S	—	—	—	—	—	—	—	0.1	—	
14. TransCanada PipeLines Limited EO-1-63	1 982.9	N/S	5.7	—	—	—	—	—	5.7	28.3	—	
15. Union Gas Company of Canada Limited EO-2-63	N/S	N/S	1.6	—	—	—	—	—	1.6	5.7	—	
16. Union Gas Company of Canada Limited EO-3-63	N/S	N/S	30.7	—	—	—	—	—	30.7	55.7(b)	—	
17. TransCanada PipeLines Limited EO-1-64	3 965.9	N/S	71.1	—	—	—	—	—	71.1	70.8	—	
18. TransCanada PipeLines Limited EO-2-64 (AO-1)	4 249.2	N/S	49.8	—	—	—	—	—	49.8	97.7	—	
19. Union Gas Company of Canada Limited EO-2-66 (AO-1)	N/S	N/S	222.7	—	—	—	—	—	222.7	222.7(b)	—	
20. Union Gas Company of Canada Limited EO-1-67	N/S	N/S	222.7	—	—	—	—	—	222.7	222.7(b)	—	
21. TransCanada PipeLines Limited EO-2-67	N/S	N/S	11.0	—	—	—	—	—	11.0	14.2	—	
22. Westcoast Transmission Company Limited EO-4-70	N/A	N/A	—	—	—	—	—	—	—	—	—	
23. TransCanada PipeLines Limited EO-1-72	2 832.8	N/A	3.5	—	—	—	—	—	3.5	14.2	—	

APPENDIX G-VIII (cont'd)

IMPORTS OF NATURAL GAS

IMPORTER AND LICENCE / ORDER	AUTHORIZED MAXIMUM		10 ⁶ m ³								TOTAL AUTHORIZED IMPORTS	REMAINING ^(a) UNDER LICENCES
	DAILY 10 ³ m ³	ANNUAL 10 ⁶ m ³	CUMULATIVE to 75-12-31	1976	1977	1978	1979	1980	CUMULATIVE TO 80-12-31			
24. TransCanada PipeLines Limited EO-4-72	1 133.1	N/A	0.6	—	—	—	—	—	0.6	1.1	—	
25. TransCanada PipeLines Limited EO-1-74	4.2	N/A	2.2	—	—	—	—	—	2.2	12.7	—	
26. TransCanada PipeLines Limited EO-2-74	N/S	N/A	1.9	—	—	—	—	—	1.9	4.0	—	
27. TransCanada PipeLines Limited EO-1-75	3 399.3	N/A	5.9	—	—	—	—	—	5.9	13.6	—	
28. TransCanada PipeLines Limited EO-2-75	113.3	N/A	0.1	—	—	—	—	—	0.1	1.1	—	
29. TransCanada PipeLines Limited EO-3-79	2 840.0	N/A	—	—	—	—	—	—	—	88.0	—	
30. TransCanada PipeLines Limited EO-1-80	4 900.0	N/A	—	—	—	—	—	8.4	8.4	29.4	—	
31. TransCanada PipeLines Limited EO-2-80	4 900.0	N/A	—	—	—	—	—	7.8	7.8	42.6	—	
32. Gaz Métropolitain, inc. GO-3-80	N/A	N/A	—	—	—	—	—	0.7	0.7	13.3(f)	12.6	
Gross Imports			66 863.3	9 323.5	8 887.7	8 926.0	8 509.1	7 978.2	110 487.9			
Deduct Imports for Re-Exports:												
Item 9, GLI-5(c)			1 889.6	415.1	392.3	380.9	528.9	423.2	4 030.0			
Item 23, EO-1-72			3.5	—	—	—	—	—	3.5			
Item 24, EO-4-72			0.6	—	—	—	—	—	0.6			
Item 25, EO-1-74			2.2	—	—	—	—	—	2.2			
Item 26, EO-2-74			1.9	—	—	—	—	—	1.9			
Item 27, EO-1-75			5.9	—	—	—	—	—	5.9			
Item 28, EO-2-75			0.1	—	—	—	—	—	0.1			
Item 29, EO-3-79			—	—	—	—	—	—	—			
Item 30, EO-1-80			—	—	—	—	—	8.4	8.4			
Item 31, EO-2-80			—	—	—	—	—	7.8	7.8			
Item 32, GO-3-80(f)			—	—	—	—	—	0.7	0.7			
Deduct Re-Imports of Exports:												
Item 10, GL-21(d)			42 650.8	6 189.6	5 964.2	6 013.8	5 602.7	5 288.5	71 709.6			
Item 11, GL-30(e)			1 464.5	300.4	310.7	291.2	290.2	278.2	2 935.3			
Item 12, GL-42(d)			9 709.5	2 303.6	2 219.7	2 238.2	2 085.2	1 968.3	20 524.4			
Item 15, EO-2-63			1.6	—	—	—	—	—	1.6			
Net Imports			11 133.1	114.8	.9	1.9	2.1	3.2	11 256.0			

(a) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.

(b) Converted from "wet base" to "dry base" for purpose of comparability.

(c) The quantities of gas authorized for import by this licence near Willow Creek, Saskatchewan, are authorized to be exported at Emerson, Manitoba pursuant to Licence GL-44.

(d) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie, Ontario, to serve the Eastern Canadian market.

(e) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(f) This Order authorizes the import of liquid volumes of 17 533 m³ at Philipsburg, Quebec for re-export at Niagara Falls, Ontario, (13 326.0 10³m³ at 37.47 MJ/m³ gas equivalent).

Figures may not total due to rounding.

N/S Figures may not total due to N/A rounding.

— Not specified

— Not applicable

Amount too small to be expressed.

APPENDIX G-IX

EXPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS* - 1980. VOLUME IN m³)

EXPORTER	LICENCE OR ORDER NUMBER	PERIOD		AUTHORIZED MAXIMUM EXPORT QUANTITY IN PERIOD	EXPORTS IN 1980 (Preliminary)
		FROM	TO		
A. PROPANE					
1. Dome Petroleum Limited	GL-31(AO-6)	80-01-01	80-12-21	688 571	623 272
2. Amoco Canada Petroleum Company Limited	GL-32(AO-4)	80-01-01	80-12-31	92 698	50 587
3. PanCanadian Gas Products Ltd.	GL-34(AO-5)	80-01-01	80-12-31	63 730	—
4. Dome Petroleum Limited	GL-46(AO-3)	80-04-01	81-03-31	547 619	364 270
5. Dome Petroleum Limited	EPR-908-77(AO-1)	80-01-01	80-12-31	238 095	—
6. Imperial Oil Limited	EPR-913-78(AO-1)	80-01-01	80-08-31	440 952	273 476
7. Dome Petroleum Limited	EPR-917-79	80-01-01	80-12-31	N/A	637 125
8. Amoco Canada Petroleum Company Limited	EPR-918-79	80-01-01	80-12-31	N/A	570 007
9. PanCanadian Gas Products Ltd.	EPR-919-79	80-01-01	80-12-31	N/A	252 669
10. Dome Petroleum Limited	EPR-921-80	80-01-25	80-06-30	N/A	25 838
11. Imperial Oil Limited	EPR-922-80	80-09-01	80-12-31	N/A	132 326
12. Amoco Canada Petroleum Company Limited	EPR-923-80	80-07-29	80-12-31	N/A	—
B. BUTANES					
1. Dome Petroleum Limited	EBU-1-74(AO-3)	80-04-01	81-03-31	689 235	295 065
2. Dome Petroleum Limited	EBU-132-74(AO-1)	80-01-01	80-12-31	580 324	343 359
3. Amoco Canada Petroleum Company Limited	EBU-133-74(AO-1)	80-01-01	80-12-31	575 893	334 342
4. PanCanadian Gas Products Ltd.	EBU-134-74(AO-1)	80-01-01	80-12-31	213 822	114 685
5. Imperial Oil Limited	EBU-906-78(AO-1)	80-01-01	80-08-31	264 736	154 113
6. Dome Petroleum Limited	EBU-910-80	80-01-25	80-06-30	N/A	16 295
7. Imperial Oil Limited	EBU-911-80	80-09-01	80-12-31	N/A	76 417
8. Amoco Canada Petroleum Company Limited	EBU-912-80	80-07-29	80-12-31	N/A	—
C. ETHANE					
1. Dome Petroleum Limited	GL-45(AO-5)	80-04-01	81-03-31	547 703	364 636
2. Dome Petroleum Limited	GL-47(AO-4)	80-01-01	80-12-31	2 195 866	1 792 106
3. Dome Petroleum Limited	GO-1-76(AO-1)	80-01-01	80-12-31	3 949	—
4. Dome Petroleum Limited	GL-51	80-01-01	80-12-31	1 090 000	1 090 000
5. Dome Petroleum Limited	GO-1-80	80-05-30	81-05-29	116 070	—
D. ETHYLENE					
1. Dow Chemical of Canada Limited	EYL-1-76(AO-2)	80-01-01	80-12-31	158 757 340kg	—
2. Imperial Oil Limited	EYL-2-79	80-04-01	81-03-31	9 071 850kg	3 315 970kg
3. Dow Chemical of Canada Limited	EYL-2-76(AO-1)	80-01-01	80-12-31	68 038 860kg	68 000 000kg
4. Dow Chemical of Canada Limited	EYL-1-80	80-02-07	80-12-31	9 000 000kg	3 756 803kg

* See Appendix G-IV for particulars.

APPENDIX G-X

IMPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS* - 1980.

(VOLUME IN m³)

IMPORTER	LICENCE OR ORDER NUMBER	PERIOD		AUTHORIZED MAXIMUM IMPORT QUANTITY IN PERIOD	IMPORTS IN 1980 (Preliminary)
		FROM	TO		
A. PROPANE					
1. Dome Petroleum Limited	GL-46(AO-3)	80-04-01	81-03-31	547 619	440 766
2. Dome Petroleum Limited	EPR-908-77(AO-1)	80-01-01	80-12-31	238 095	—
3. Imperial Oil Limited	EPR-913-78(AO-1)	80-01-01	80-08-31	440 952	256 058
4. Dome Petroleum Limited	EPR-917-79	80-01-01	80-12-31	N/A	586 155
5. Amoco Canada Petroleum Company Limited	EPR-918-79	80-01-01	80-12-31	N/A	507 306
6. PanCanadian Gas Products Limited	EPR-919-79	80-01-01	80-12-31	N/A	252 669
7. Dome Petroleum Limited	EPR-921-80	80-01-25	80-06-30	N/A	24 902
8. Imperial Oil Limited	EPR-922-80	80-09-01	80-12-31	N/A	107 184
9. Amoco Canada Petroleum Company Limited	EPR-923-80	80-07-29	80-12-31	N/A	—
B. BUTANES					
1. Dome Petroleum Limited	EBU-1-74(AO-3)	80-04-01	81-03-31	689 235	345 226
2. Dome Petroleum Limited	EBU-132-74(AO-1)	80-01-01	80-12-31	580 324	360 526
3. Amoco Canada Petroleum Company Limited	EBU-133-74(AO-1)	80-01-01	80-12-31	575 893	297 564
4. PanCanadian Gas Products Ltd.	EBU-134-74(AO-1)	80-01-01	80-12-31	213 822	114 685
5. Imperial Oil Limited	EBU-906-78(AO-1)	80-01-01	80-08-31	264 736	148 045
6. Dome Petroleum Limited	EBU-910-80	80-01-25	80-06-30	N/A	15 659
7. Imperial Oil Limited	EBU-911-80	80-09-01	80-12-31	N/A	59 605
8. Amoco Canada Petroleum Company Limited	EBU-912-80	80-07-29	80-12-31	N/A	—
C. ETHANE					
1. Dome Petroleum Limited	GL-45(AO-5)	80-04-01	81-03-31	547 703	363 906
2. Dome Petroleum Limited	GO-1-76(AO-1)	80-01-01	80-12-31	3 949	—
D. ETHYLENE					
1. Dow Chemical of Canada Limited	EYL-2-76(AO-1)	80-01-01	80-12-31	68 038 860kg	68 000 000kg

* See Appendix G-VII for particulars.

APPENDIX G-XI

NET EXPORTS OF PROPANE AND BUTANES

A) PROPANE (Volume in m³)

EXPORTER	1978	1979	1980 (Preliminary)
Amoco Canada Petroleum Co. Ltd.	465 023	615 467	436 672
Big Horn Supply Ltd.	29 193	35 737	34 561
Burnwell Gas of Canada Ltd.	15 749	28 389	35 922
Canadian Enterprise Gas Products Ltd.	70 708	102 576	83 916
Canadian Superior Oil Ltd.	72 865	118 757	112 590
Can-Am Liquids Corps. Ltd. ^(a)	—	—	1 229
Chevron Standard Ltd.	177 794	333 531	277 115
Cigas Products Ltd.	22 391	12 104	2 359
C.W. Gas Ltd.	12	41	—
Dalco Petroleum Ltd. ^(b)	14 259	25 408	17 974
Dillingham Corporation Canada Ltd.	56 818	91 084	66 300
Dome Petroleum Limited	1 065 449	913 839	831 226
Elgin Petroleum Limited	2 710	3 259	7 672
Esso Resources Canada Limited	194 330	436 980	487 497
Gasbec Inc.	35 314	37 847	68 121
Gas Supply (Minneapolis) Ltd.	23 632	32 376	3 138
Gulf Canada Products Company	439 863	519 585	517 670
Home Oil Company Limited	69 873	87 133	74 635
Hudson's Bay Oil and Gas Company Limited	65 941	75 522	72 550
ICG Canadian Propane Gas & Oil Ltd. ^(d)	5 808	4 646	1 256
Irving Oil Company	471	11 914	11 965
Koch Hydrocarbons Canada	15 797	8 172	8 394
Mobil Oil Canada Ltd.	76 919	94 991	135 388
N.G.L. Supply Ltd.	29 695	75 903	39 110
Northern Petro Products Ltd.	4 156	2 939	2 069
Northern Raymond Oil Co. Ltd.	—	6 310	5 243
PanCanadian Gas Products Ltd.	140 231	225 399	179 675
Petro-Canada Exploration Inc. ^(e)	183 414	267 463	289 084
Petrosol International Ltd.	—	13 177	13 002
Real International Marketing Ltd.	214	1 192	2 645
G.W. Sample	—	693	—
Shell Canada Resources Limited	63 037	167 205	173 468
Stephens Energy Limited	—	5 299	40 595
Stillings Canada Petroleum Company	107 728	98 562	74 980
Texaco Canada Inc.	—	68 657	126 113
Union Oil Co. of Canada Ltd.	22 701	33 501	29 645
Union Texas of Canada Ltd.	60 997	57 697	77 233
TOTALS	3 533 092	4 613 355	4 341 012

(a) This company started exporting in July, 1980.

(b) Prior to September 1979, exports were listed under the name of M-P Petroleum Ltd.

(c) Prior to July 1980, exports were listed under the name of Canmore Oil and Gas Limited.

(d) Prior to January 1980, exports were listed under the name of Canadian Propane Gas & Oil Ltd.

(e) Prior to October 1979, exports were listed under the name of Pacific Petrochemicals Ltd.

APPENDIX G-XI (cont'd)

NET EXPORTS OF PROPANE AND BUTANES

B) BUTANES (Volume in m³)

EXPORTER	1978	1979	1980 (Preliminary)
Amoco Canada Petroleum Co. Ltd.	331 246	470 749	329 357
Belgo Canada Manufacturing Co. Ltd.	—	4	3
Big Horn Supply Ltd.	11 008	23 471	22 611
Canada Cities Service, Ltd.	—	1 419	—
Canadian Enterprise Gas Products Ltd.	23 095	34 246	37 113
Canadian Superior Oil Ltd.	26 832	56 310	33 838
Can-Am Liquids Corp. Ltd. ^(a)	—	—	7 658
Chevron Standard Ltd.	4 414	12 942	10 500
Cigas Products Ltd.	19 366	4 269	—
Dalco Petroleum Ltd. ^(b)	13 820	38 156	25 968
Dillingham Corp. Canada Ltd.	8 780	11 511	—
Dome Petroleum Limited	538 567	420 076	451 221
Elgin Petroleum Limited	1 077	31 684	19 958
Esso Resources Canada Limited	38 226	122 221	112 198
Home Oil Company Limited	72 219	103 442	63 445
Hudson's Bay Oil and Gas Company Limited	270 042	276 608	279 631
Husky Oil Operations Ltd.	21 945	5 316	7 272
Koch Hydrocarbons Canada	159 377	203 487	223 314
Mobil Oil Canada Ltd.	86 492	86 407	119 435
Murphy Oil Company Ltd.	7 244	14 062	17 941
N.G.L. Supply Ltd.	27 849	67 066	47 865
Northern Petro Products Ltd.	—	1 965	6 404
Northern Raymond Oil Co. Ltd.	—	3 012	2 270
PanCanadian Gas Products Ltd.	71 344	40 356	45 420
Petro-Canada Exploration Inc. ^(d)	73 815	96 152	91 343
Petrosol International Ltd.	44 209	101 631	56 004
G.W. Sample	—	599	857
Shell Canada Resources Limited	175 486	214 841	164 532
Stephens Energy Limited	—	4 734	55 336
Stillings Canada Petroleum Company	66 550	132 348	166 096
Suncor Inc. ^(e)	46 986	34 860	—
Texaco Canada Inc.	71 050	101 206	135 707
Union Oil Co. of Canada Ltd.	—	10 387	25 836
TOTALS	2 211 039	2 725 537	2 559 133

(a) This company started exporting in July, 1980

(b) Prior to September 1979, exports were listed under the name of M-P Petroleum Ltd.

(c) Prior to July 1980, exports were listed under the name of Canmore Oil and Gas Limited

(d) Prior to October 1979, exports were listed under the name of Pacific Petroleum Ltd.

(e) Prior to July 1979, exports were listed under the name of Sunoco Inc.

APPENDIX O-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR OIL PIPELINES ISSUED DURING 1980

APPLICANT	FACILITIES	ESTIMATED COST	HEARD	ISSUED	CERTIFICATE NO.
Interprovincial Pipe Line Limited	Approximately 46 km of 864 mm O.D. mainline as part of Alberta mainline replacement program - near Edmonton	\$14,610,000	Feb. 26, 1980	April 17, 1980	OC-34

APPENDIX O-II

ORDERS RELATING TO NEW OIL PIPELINE FACILITIES ISSUED DURING 1980 CLASS "B" CONSTRUCTION

APPLICANT	FACILITIES	ESTIMATED COST	ISSUED	ORDER NO.
Cochin Pipe Lines Ltd.	Regina Meter Station and associated facilities, Saskatchewan	\$ 990,000	April 24, 1980	XO-1-80
Cochin Pipe Lines Ltd.	Additional Metering facilities at Alameda Pump Station, Saskatchewan	\$ 413,310	Oct. 22, 1980	XO-7-80
Manito Pipe Lines Ltd.	Cone roof storage tank booster pump and displacement meter at existing Unity Pump Station, Saskatchewan	\$ 1,020,000	April 30, 1980	XO-2-80
Manito Pipe Lines Ltd.	Additional Facilities at existing Blackfoot Pump Station, Alberta	\$ 20,350	Nov. 26, 1980	XO-8-80
Trans-Northern Pipe Line Company	Approximately 6.8 km of 323.9 mm O.D. pipeline - Gloucester Twp. to Nepean Twp. as part of Ottawa Lateral, Ontario.	\$ 1,250,000	Oct. 2, 1980	XO-3-80
Trans-Northern Pipe Line Company	All	\$ 1,330,000		
	Two 600 kW motors and pumps at Clarkson Pump Station		Oct. 22, 1980	XO-4-80
	Three 600 kW motors and pumps at Bowmanville Pump Station		Oct. 22, 1980	XO-5-80
	Two 600 kW motors and pumps at Castleton Pump Station		Oct. 22, 1980	XO-6-80

CLASS "C" CONSTRUCTION

APPLICANT	FACILITIES	ESTIMATED COST	ISSUED	ORDER NO.
Cochin Pipe Lines Ltd.	All	\$ 2,359,666		
	Corrosion protection, pump stations, metering, communications and buildings, etc.	\$ 1,651,966	July 3, 1980	XOM-7-80
	Pump stations, metering, communications and contingencies	\$ 707,700	Nov. 5, 1980	XOM-10-80*
Dome Kerrobert Pipeline Ltd. & PanCanadian Kerrobert Pipeline Ltd.	Miscellaneous	\$ 27,500	June 24, 1980	XOM-6-80
Dome NGL Pipeline Ltd.	Condensate Meter, densitometer upgrading and contingencies	\$ 96,600	July 3, 1980	XOM-8-80
Interprovincial Pipe Line Limited	All	\$44,098,840		
	Pump stations, tankage, metering, buildings, contingencies, etc.	\$ 6,195,670	May 29, 1980	XOM-3-80
	Pump stations, tankage, metering, communications, contingencies, etc.	\$37,903,170	Dec. 3, 1980	XOM-11-80*
Manito Pipelines Ltd.	Test facilities, fencing, Unity truck terminal automation, and Lone Rock mixer and contingencies	\$ 129,200	May 21, 1980	XOM-2-80
Trans Mountain Pipe Line Company	Corrosion prevention, station equipment, buildings and grounds, tanks, automotive and work equipment plus contingencies	\$ 710,030	March 27, 1980	XOM-1-80
Trans-Northern Pipe Line Company	Corrosion protection, pump stations, meter stations, communications, contingency, etc.	\$ 1,376,000	Aug. 13, 1980	XOM-9-80
Wascana Pipe Line Ltd.	Contingency	\$ 50,000	June 4, 1980	XOM-4-80
Westspur Pipe Line Company	Pipeline replacement, pump and meter stations, communication systems and contingencies	\$ 220,100	June 24, 1980	XOM-5-80

* Class "C" Construction approved for the year 1981

APPENDIX O-III

EXPORTS OF CANADIAN CRUDE OIL AND EQUIVALENT TO THE UNITED STATES 1980 AND 1979

COMPANY	DESTINATION	1980		1979	
		TOTAL CUBIC METRES FOR YEAR	DAILY AVERAGE	TOTAL CUBIC METRES FOR YEAR	DAILY AVERAGE
Districts I-IV					
Ashland Oil Inc.	N. Tonawanda, N.Y.	159 496.9	435.8	96 818.3	265.3
Ashland Oil Inc.	Canton, Ohio	77 030.8	210.5	32 194.0	88.2
Ashland Oil Inc.	Findlay, Ohio	146 899.4	401.4	225 806.8	618.6
Ashland Oil Inc.	St. Paul, Minnesota	186 165.4	508.7	858 417.4	2 351.8
Cdn. Hydrocarbons Ltd.	Cut Bank, Montana	1 166.6	3.1	1 348.6	3.7
Clark Oil & Refining Corp.	Blue Island, Illinois	.2	—	—	—
Cliffs Fuel Service Co.	Rapid River, Michigan	231.3	.6	4 053.6	11.1
Conoco Inc.	Billings, Montana	—	—	619 682.3	1 697.8
Conoco Inc.	Wrenshall, Minnesota	—	—	403 593.0	1 105.7
Consumers Power Company	Bay City, Michigan	3 784.0	10.3	17 940.7	49.2
Consumers Power Company	Marysville, Michigan	—	—	21 824.6	59.8
Exxon Corp.	Billings, Montana	23.1	—	357 822.3	980.3
Farmers Union Central Exchange	Laurel, Montana	—	—	301 226.7	825.3
Koch Refining Co.	Pine Bend, Minnesota	3 726 091.5	10 180.6	4 655 474.1	12 754.7
Laketon Asphalt Refining Inc.	Laketon, Michigan	25 332.0	69.2	25 066.8	68.7
Marathon Oil Co.	Detroit, Michigan	8 666.0	23.7	381.0	1.0
Mobil Oil Corp.	Joliet, Illinois	770 134.9	2 104.2	359 041.9	983.7
Murphy Oil Corp.	Superior, Wisconsin	284 894.5	778.4	894 706.2	2 451.2
Standard Oil Co. (Ohio)	Toledo, Ohio	9 531.5	26.1	142 502.1	390.4
Sunoco Inc.	Toledo, Ohio	36.6	.1	—	—
Total Petroleum Inc.	Alma, Michigan	.1	—	—	—
Union Oil Co. of California	Lemont, Illinois	29 401.9	80.3	96 903.4	265.5
Other		185.1	.5	28.3	0.1
TOTAL DISTRICTS I-IV		5 429 071.8	14 833.5	9 114 832.1	24 972.1

APPENDIX O-IV

LICENCES ISSUED FOR EXPORTS OF CRUDE OIL AND EQUIVALENT – 1980

EXPORTER	CUBIC METRES
Alberta Research Council	8.0
Amoco Canada Petroleum Co., Ltd.	14 956.1
Chevron Standard Ltd.	8.0
Consumers' Co-operative Refineries Ltd.	0.3
Dome Petroleum Ltd.	587 948.4
Ford Motor Co.	.1
Gulf Canada Products Company	49 872.5
Hudson's Bay Oil & Gas Co., Ltd.	.3
Husky Oil Operations Ltd.	1.9
Imperial Oil Ltd.	17 969.3
Koch Oil Company, Ltd.	3 768 387.4
Mobil Oil Canada, Ltd.	781 929.3
Murphy Oil Company, Ltd.	286 356.2
Petro Canada Ltd.	0.2
Petrosar Ltd.	8.3
Phillips Petroleum Ltd.	0.5
Sunoco Inc.	35.4
Texaco Canada Inc.	5.0
Union Oil Company of Canada Ltd.	33 834.2
TOTAL	5 541 321.4

APPENDIX O-V

EXPORT CHARGES IN 1980 FOR CRUDE OIL AND REFINED PETROLEUM PRODUCTS

\$ PER CUBIC METRE)

TYPE	JAN. (1)	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG. (2)	SEP.	OCT.	NOV.	DEC.
Light & Medium Crude Oil	138.55	144.80	157.30	163.70	170.00	170.00	181.00	181.00	168.40	168.40	174.50	180.80
Designated Heavy Crude Oils	116.10	135.00	135.00	135.00	135.00	135.00	135.00	135.00	122.40	116.10	116.10	122.40
Lloydminster Type Blends	113.30	132.20	132.20	132.20	132.20	131.85	131.85	131.85	119.25	106.65	102.90	102.90
Condensate	138.55	144.80	157.30	163.70	170.00	170.00	181.00	181.00	168.40	168.40	174.50	180.80
Motor Gasoline	97.55	110.15	114.85	136.90	146.35	146.35	140.05	140.05	136.90	124.30	129.30	129.00
Middle Distillates	97.55	103.85	103.85	108.55	121.15	121.15	139.71	125.25	125.25	121.45	124.60	127.75
Heavy Fuel Oil	67.35	67.35	70.50	76.80	76.80	76.80	64.20	64.20	61.05	61.05	72.05	84.65
Partially Processed Oil	97.55	110.15	114.85	136.90	146.35	146.35	140.05	125.25	112.65	121.45	121.45	117.35

) Reduction of \$6.30 per cubic metre applicable in respect of volumes of crude oil and equivalent exported in January which entered exporting pipeline systems after January 1, 1980.

) Reduction of \$12.60 per cubic metre applicable in respect of volumes of crude oil and equivalent exported in August which entered exporting pipeline systems after August 1, 1980.

APPENDIX O-VI

EXPORTS OF LICENSED PETROLEUM PRODUCTS – 1980

m³)

MONTH	PARTIALLY PROCESSED OIL	MOTOR GASOLINE AND JET B	HEAVY FUEL OIL	MIDDLE DISTILLATE	TOTAL
January	40 287.2	120 140.2	161 122.4	108 572.1	430 121.9
February	51 548.2	118 972.7	137 820.7	321 342.3	629 683.9
March	42 991.1	59 231.8	148 745.4	234 792.9	485 761.2
April	31 361.1	5 215.0	194 381.9	114 280.1	345 238.1
May	31 484.8	37 225.7	108 871.7	99 535.0	377 117.2
June	31 360.5	122 065.6	142 363.7	288 593.0	584 382.8
July	—	51 275.6	167 995.9	382 822.7	602 094.2
August	31 923.8	4 635.8	268 067.6	104 125.6	408 752.8
September	42 640.4	44 395.5	275 395.1	95 048.5	457 479.5
October	20 459.8	89 695.7	381 990.7	239 538.8	731 685.0
November	10 181.2	47 410.9	436 496.8	210 038.0	704 126.9
December	20 781.0	14 168.9	167 521.2	57 077.5	259 548.6
TOTAL	355 337.5	714 433.4	2 690 619.2	2 255 766.5	6 016 156.6

APPENDIX O-VII

EXCHANGES OF CRUDE OIL AND EQUIVALENT WITH THE U.S. VIA MID-CONTINENT PIPELINE SYSTEMS - 1980

LICENCE HOLDER	EXCHANGE PARTNER	QUANTITY IN CUBIC METRES		
		LICENSED	EXPORTED	IMPORTED
BP Oil Ltd.	Conoco Inc.	59 280.0	4 414.6	42 230.2
BP Oil Ltd.	Mobil Oil Corporation	334 892.0	215 285.9	235 785.6
BP Oil Ltd.	Murphy Oil Corporation	588 313.0	355 394.4	291 334.6
BP Oil Ltd.	Phillips Petroleum Co.	93 801.0	50 923.7	40 380.0
Consumers Co-op Refineries Ltd.	Conoco Inc.	86 624.1	41 093.2	45 042.9
Gulf Canada Products Co.	Amoco Production Co.	—	—	456.5
Gulf Canada Products Co.	Ashland Oil Inc.	—	3 536.0	—
Gulf Canada Products Co.	Conoco Inc.	345 308.5	247 827.1	223 592.9
Gulf Canada Products Co.	Farmers Union Central Exchange	239 957.1	82 944.0	99 465.9
Gulf Canada Products Co.	Murphy Oil Corporation	485 002.2	440 796.0	429 327.7
Imperial Oil Ltd.	Exxon Corporation	685 268.0	471 078.2	468 249.5
Petrosar Ltd.	Total Petroleum Inc.	39 727.5	38 651.2	38 378.9
Shell Canada Ltd.	Conoco Inc.	1 105 693.3	922 700.5	902 251.4
Shell Canada Ltd.	Farmers Union Central Exchange	509 241.7	503 134.4	509 454.3
Shell Canada Ltd.	Shell Oil Co.	1 187 452.6	1 227 084.4	1 223 000.7
Sunoco Inc.	Ashland Oil Inc.	523 598.0	377 848.3	379 447.3
Sunoco Inc.	Conoco Inc.	455 665.0	71 597.0	71 840.9
Texaco Canada Inc.	Exxon Corporation	204 784.0	131 848.4	140 875.3
TOTAL		6 944 608.0	5 186 157.3	5 140 114.6

APPENDIX O-VIII

EASTERN CANADIAN EXCHANGE SHIPMENTS - 1980

LICENCE HOLDER	EXCHANGE PARTNER	QUANTITY IN CUBIC METRES		
		LICENSED	EXPORTED	IMPORTED
BP Oil Ltd.	Conoco Inc.	558 908.0	565 428.3	558 784.7
Ultramar Canada Inc.	Conoco Inc.	104 880.6	103 924.8	233 515.9
Ultramar Canada Inc.	Mobil Oil Corporation	610 203.0	610 231.9	723 891.0
Gulf Canada Products Co.	Ashland Oil Inc.	—	263.2	—
Gulf Canada Products Co.	Conoco Inc.	119 995.0	119 975.4	119 975.4
Gulf Canada Products Co.	TransOcean Gulf Oil Co.	—	1 924.4	—
Petrofina Canada Ltd.	Ashland Oil Inc.	87 400.0	81 904.2	82 695.6
Petrofina Canada Ltd.	Conoco Inc.	71 484.0	70 865.3	70 865.3
Suncor Inc.	Ashland Oil Inc.	—	1 958.2	—
TOTAL		1 552 870.6	1 556 475.7	1 789 727.9

APPENDIX E-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR INTERNATIONAL POWER LINES PURSUANT TO SECTION 44 ISSUED DURING 1980

No certificates were issued in 1980

APPENDIX E-II

ORDERS RELATING TO INTERNATIONAL POWER LINES ISSUED DURING 1980

TYPE OF ORDER	APPLICANT	FACILITIES	ISSUED	ORDER NO.
Exemption Order pursuant to Section 49	1. Roseau Electric Co-operative Inc.	One international power line extending from the metering equipment on the premises of Tut and Cal Marvin on Island #EB395, Lake of the Woods, Province of Ontario, to a point on the international boundary north of Penasse Island in the State of Minnesota. The single phase line operates at 7.2 kV	26 Aug. 1980	XE-1-80
Order under the International Power Line Regulations	2. British Columbia Hydro and Power Authority	Order approving the change in the existing international power line, as authorized by Certificate No. EC-29, from an overhead line operating at 12 kV to an underground cable at 25 kV.	20 Dec. 1979*	AO-1-EC-29

* Approved by Order in Council in 1980.

APPENDIX E-III

LICENCES TO EXPORT ELECTRIC POWER AND ENERGY PURSUANT TO SECTION 82 ISSUED DURING 1980

APPLICANT	CLASS	MEGAWATTS	ANNUAL GIGAWATT- HOURS	TERM		APPLICATION HEARD	ISSUED	LICENCE NO.
				FROM	TO			
1. British Columbia Hydro and Power Authority	Firm	7	32	01/04/80	30/09/84	11-12 Dec. 79 22-25 Jan. 80 28-29 Jan. 80	3 March 1980	EL-126
	Carrier transfer		2 000	01/04/80	30/09/84	11-12 Dec. 79 22-25 Jan. 80 28-29 Jan. 80	3 March 1980	EL-127
	Short-term firm	2 000	3 000	01/04/80	30/09/84	11-12 Dec. 79 22-25 Jan. 80 28-29 Jan. 80	3 March 1980	EL-128
	Interruptible	75	525.6	01/04/80	30/06/84	11-12 Dec. 79 22-25 Jan. 80 28-29 Jan. 80	3 March 1980	EL-129
	Interruptible		10 000	01/04/80	30/09/84	11-12 Dec. 79 22-25 Jan. 80 28-29 Jan. 80	3 March 1980	EL-130
2. Canadian Niagara Power Company Limited	Firm	35.062	130	27/03/80	30/09/84	30 Jan. 80	20 February 1980	EL-124
	Interruptible		250	27/03/80	30/09/84	30 Jan. 80	20 February 1980	EL-125
3. Hydro-Québec	Interruptible	52	320	01/10/80	30/09/85	26 June 80	5 August 1980	EL-131
	Firm	32	131.4(1981)	01/01/81	31/12/85	26 June 80	5 August 1980	EL-132
		37	152.0(1982)					
		39	160.2(1983)					
		42	172.5(1984)					
	Interruptible	80*	525* (1981) 525* (1982) 525* (1983) 525* (1984) 400* (1985)	01/01/81	30/09/85	26 June 80	5 August 1980	EL-133

* Less exports under Licence EL-132

APPENDIX E-IV

ORDERS RELATING TO EXPORT OF ELECTRIC POWER AND ENERGY ISSUED DURING 1980

Orders Issued Pursuant to Section 6A Of The Regulations Under Part VI Of The Act

APPLICANT	CLASS	KILOWATTS	ANNUAL KILOWATT HOURS	TERM		ISSUED	ORDER NO.
				FROM	TO		
1. The Manitoba Hydro-Electric Board	Firm	12	15 000	01/08/80	31/07/83	18 April 1980	ELO-153

Amending Orders Issued Relative to Electric Power and Energy

APPLICANT	ASSOCIATED LICENCE	ISSUED	ORDER NO.
1. The Manitoba Hydro-Electric Board	EL-101	1 February 1980	AO-1-EL-101
2. The Manitoba Hydro-Electric Board	EL-102	28 March 1980	AO-2-EL-102
3. Canadian Niagara Power Company Limited	EL-84	18 April 1980	RO-1-EL-84
4. The New Brunswick Electric Power Commission	EL-64	26 May 1980	AO-1-EL-64
5. The New Brunswick Electric Power Commission	EL-65	26 May 1980	AO-1-EL-65
6. The Manitoba Hydro-Electric Board	ELO-153	9 June 1980	AO-1-ELO-153
7. British Columbia Hydro & Power Authority	EL-129	9 June 1980	AO-1-EL-129
8. St. Lawrence Power Company	EL-114	30 September 1980	AO-1-EL-114
9. The Detroit and Windsor Subway Company	ELO-152	17 October 1980	AO-1-ELO-152
10. Boise Cascade Canada Ltd.	EL-63	18 December 1980	AO-2-EL-63

APPENDIX E-V

EXPORTS OF ELECTRIC ENERGY - CALENDAR YEAR 1980

EXPORTER	LICENCE NUMBER	MEGAWATT HOURS					REPORTED DOLLAR VALUE OF EXPORT	
		LICENCE AUTHORIZATION		GROSS ENERGY EXPORTED			FIRM	INTER-RUPTIBLE
		FIRM	INTER-RUPTIBLE	FIRM	INTER-RUPTIBLE	EXCHANGE ⁽¹⁾		
1. Maine and New Brunswick Electrical Power Company, Limited	EL-22 EL-23	250 000	25 000	98 603	—		879 944	
2. Fraser Inc.	EL-122 EL-123	400 000	50 000	340 870	—		12 008 226	
3. The New Brunswick Electric Power Commission	AO-1-EL-64 AO-1-EL-65 AO-4-EL-66 EL-108 EL-109 EL-110 EL-111 EL-112 ELO-146 to ELO-148	3 504 000 ⁽²⁾ 876 000 140 000 250 000 140 000 300 000 179 000 300	2 190 000 ⁽²⁾ 300 000 179 000	2 408 816 — — 219	891 457 158 163 6 301	—392 642 1 748 337 333 —29 254 55 335 —47	88 480 466 — — 9 688	39 036 598 9 124 650 244 836
TOTAL NEW BRUNSWICK				2 848 508	1 055 921	—27 527	101 378 324	48 406 084
4. Cedars Rapids Transmission Company Limited	ELO-150		20 000		—			
5. Hydro-Québec	EL-96 EL-113 EL-131 EL-106 EL-107 ELO-131 ELO-136 to ELO-143 ELO-132 to ELO-134	3 000 000 17 392 197 600 13 175 712 1 040	10 200 000 320 000 	3 000 000 5 741 181 020 6 770 427 24	4 795 888 112 825 	3 944 	26 771 000 213 230 4 514 256 240 835 15 542 729	128 594 307 3 408 728
TOTAL QUEBEC				3 193 982	4 908 713	3 944	31 755 592	132 003 035
6. Ontario Hydro	EL-32 EL-94 EL-95 ELO-144	15 000 80	8 000 000 15 000 000	985 13	10 721 820	—254 847 3 032	1 969 536	359 142 531
7. Canadian Niagara Power Company Limited	AO-1-EL-83 EL-84 EL-124 EL-125	175 000 130 000	200 000 250 000	1 190 92 594	42 851 164 456	1 541 6 596	22 935 1 751 360	715 677 2 711 238
8. Boise Cascade Canada Ltd.	AO-1-EL-62 AO-2-EL-63	306 600	87 600	225 277	—		5 482 636	
9. The Detroit and Windsor Subway Company	AO-1- ELO-152	1 250		836			—	
10. The Canadian Transit Company	ELO-145	25		24			—	
11. St. Lawrence Power Company	EL-114 EL-115 EL-116		250 000 150 000 150 000		48 838	99 245 24 902		809 892
12. Dow Chemical of Canada Ltd.	EL-121		438 000		135 291			5 226 287
TOTAL ONTARIO				320 919	11 113 256	—119 531	7 259 436	368 605 625

APPENDIX E-V (cont'd)

EXPORTS OF ELECTRIC ENERGY - CALENDAR YEAR 1980

EXPORTER	LICENCE NUMBER	MEGAWATT HOURS					REPORTED DOLLAR VALUE OF EXPORT	
		LICENCE AUTHORIZATION		GROSS ENERGY EXPORTED				
		FIRM	INTER- RUPTIBLE	FIRM	INTER- RUPTIBLE	EXCHANGE ⁽¹⁾	FIRM	INTER- RUPTIBLE
13. Manitoba Hydro	EL-90		4 600 000		1 156 015	- 7 854		19 450 532
	EL-91	1 200 000		137 462			2 845 101	
	EL-92	1 200 000		—			—	
	EL-93	300 000		—			—	
	EL-97		1 500 000		649 418			8 772 412
	EL-98	876 000		252 931			5 691 179	
	EL-99	262 800		262 800			3 365 905	
	EL-100	800 000		—			—	
	EL-101	2 500 000				84 285		
	EL-102	5 000 000		207 247			4 169 416	
	EL-103		12 000 000 ⁽³⁾		658 963	126 692		10 794 848
	ELO-153	15		12			474	
	ELO-149	7 884		760			17 527	
TOTAL MANITOBA				861 212	2 464 396	203 123	16 089 602	39 017 792
14. British Columbia Hydro and Power Authority	AO-1-EL-85	25 000		3 586			86 950	
	EL-86	1 000 000						
	AO-1-EL-87	800 000				208 505		
	AO-1-EL-88	2 000 000		—			—	
	AO-1-EL-89		3 600 000			35 141		
	EL-126	32 000		7 810			223 507	
	EL-127	2 000 000				775 870		
	EL-128	3 000 000		—			—	
	EL-129		525 600		470 830			7 234 730
	EL-130		10 000 000 ⁽⁴⁾		183 984	867 642		8 848 510
15. Cominco Ltd.	ELO-151	600		247			23 962	
	EL-20		500 000			—		
	EL-104	50 000		—			—	
16. West Kootenay Power and Light Company	EL-105		1 400 000	795 207	5 037		32 644 561	
	ELO-135	50		24			697	
TOTAL BRITISH COLUMBIA				11 667	1 450 021	1 892 195	335 116	48 727 801
TOTAL CANADA				7 236 288	20 992 307	1 952 204	156 818 070	636 760 337

1) Exchange is no value energy. It includes inadvertent and circulating flows, equichange, storage, adjustment transfers and wheeling or carrier transfer.

2) Total exports under Licences EL-64 and EL-65 should not exceed 4 380 GW-h.

3) Total exports should not exceed 12 000 GW-h when combined with the amounts exported under Licences EL-97, EL-98, EL-99, EL-100, EL-101 and EL-102.

4) Total exports should not exceed 10 000 GW-h during the water year (1 October to 30 September) when combined with Licences EL-128 and EL-129.

APPENDIX E-VI

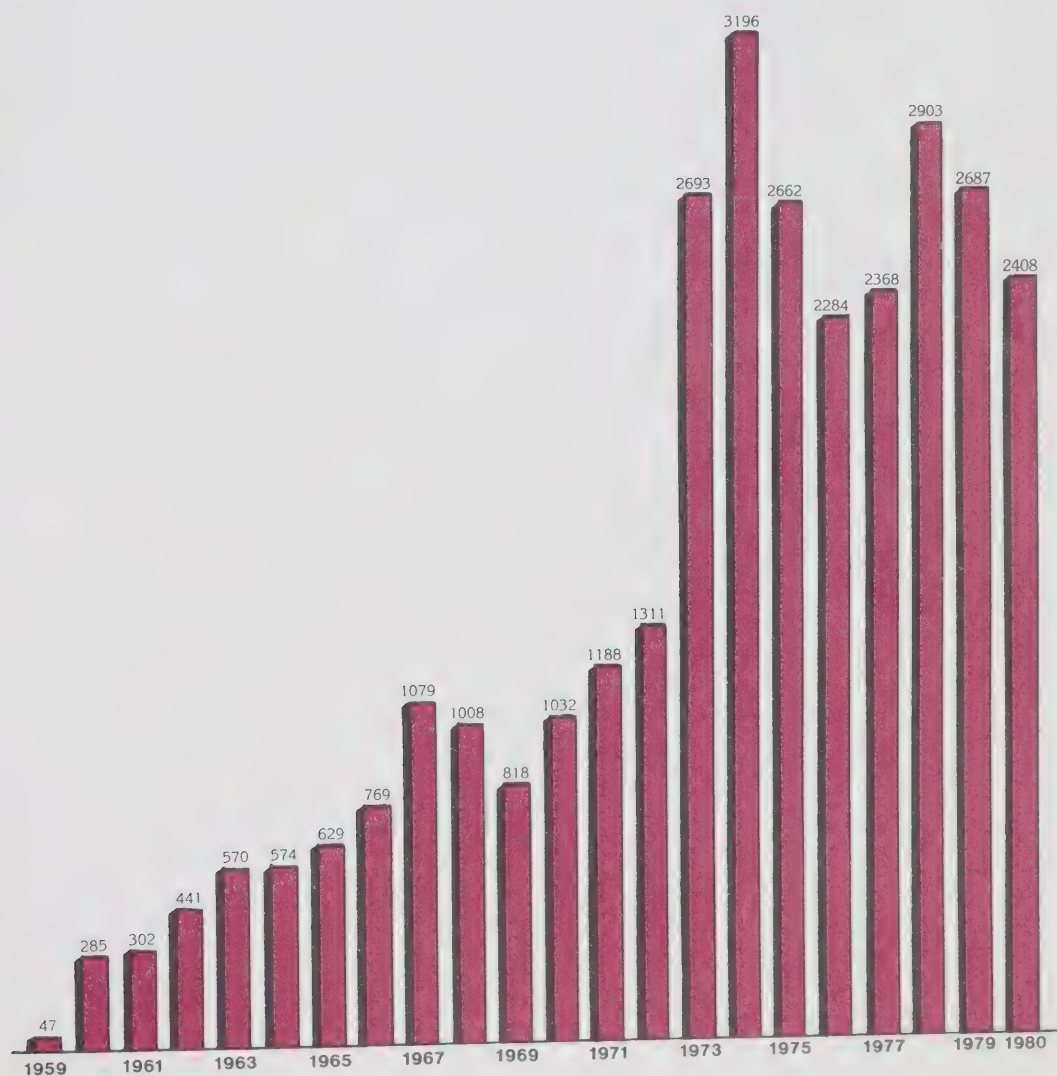
TOTAL CANADIAN ELECTRIC ENERGY SUPPLY AND TRADE WITH THE UNITED STATES — 1980

CATEGORY	GIGAWATT HOURS
Electric Energy Generation for all Canada	366 585(Preliminary)
Electric Energy Importation from U.S.A.	2 940(Preliminary)
Total Canadian Electric Energy Supply	369 525(Preliminary)
Electric Energy Export (Gross) to U.S.A.	7 236(firm) 2.0% of Canadian supply
	20 992(interruptible) 5.7% of Canadian supply
	1 952(exchange) 0.5% of Canadian supply
Total Electric Energy made available in Canada	339 345(Preliminary)

APPENDIX S-I

TOTAL NUMBER OF BOARD CERTIFICATES, LICENCES, PERMITS, ORDERS AND AUTHORIZATIONS BETWEEN 1959 and 1980

The National Energy Board Act was proclaimed on November 2, 1959.



BINDING SECT. OCT 22 1981

